

**Meeting of the Federal Open Market Committee on
June 23–24, 2009**

A joint meeting of the Federal Open Market Committee and Board of Governors of the Federal Reserve System was held in the offices of the Board of Governors in Washington, D.C., on Tuesday, June 23, 2009, at 1:00 p.m., and continued on Wednesday June 24, 2009, at 9:00 a.m. Those present were the following:

Mr. Bernanke, Chairman
Mr. Dudley, Vice Chairman
Ms. Duke
Mr. Evans
Mr. Kohn
Mr. Lacker
Mr. Lockhart
Mr. Tarullo
Mr. Warsh
Ms. Yellen

Messrs. Bullard and Hoenig, Ms. Pianalto, and Mr. Rosengren, Alternate Members of the Federal Open Market Committee

Messrs. Fisher, Plosser, and Stern, Presidents of the Federal Reserve Banks of Dallas, Philadelphia, and Minneapolis, respectively

Mr. Madigan, Secretary and Economist
Ms. Danker, Deputy Secretary
Mr. Luecke, Assistant Secretary
Mr. Skidmore, Assistant Secretary
Ms. Smith, Assistant Secretary
Mr. Alvarez,¹ General Counsel
Mr. Baxter, Deputy General Counsel
Mr. Sheets, Economist
Mr. Stockton, Economist

Messrs. Altig, Clouse, Connors, Kamin, Slifman, Weinberg, and Wilcox, Associate Economists

Mr. Sack, Manager, System Open Market Account

Ms. Johnson, Secretary of the Board, Office of the Secretary, Board of Governors

Mr. Frierson,¹ Deputy Secretary, Office of the Secretary, Board of Governors

¹ Attended Tuesday's session only.

Mr. Struckmeyer, Deputy Staff Director, Office of the Staff Director for Management, Board of Governors

Mr. English, Deputy Director, Division of Monetary Affairs, Board of Governors

Mr. Blanchard, Assistant to the Board, Office of Board Members, Board of Governors

Messrs. Greenlee, Nelson, Reifschneider, and Wascher, Associate Directors, Divisions of Banking Supervision and Regulation, Monetary Affairs, Research and Statistics, and Research and Statistics, respectively, Board of Governors

Mr. Gagnon, Visiting Associate Director, Division of Monetary Affairs, Board of Governors

Mr. Oliner, Senior Adviser, Division of Research and Statistics, Board of Governors

Messrs. Carpenter and Perli, Deputy Associate Directors, Division of Monetary Affairs, Board of Governors

Mr. Kiley, Assistant Director, Division of Research and Statistics, Board of Governors

Mr. Small, Project Manager, Division of Monetary Affairs, Board of Governors

Ms. Lindner, Group Manager, Division of Research and Statistics, Board of Governors

Mr. Wood, Senior Economist, Division of International Finance, Board of Governors

Messrs. Driscoll, King,¹ and McCarthy, Economists, Division of Monetary, Board of Governors

Ms. Beattie, Assistant to the Secretary, Office of the Secretary, Board of Governors

Ms. Low, Open Market Secretariat Specialist, Division of Monetary Affairs, Board of Governors

Messrs. Fuhrer and Rosenblum, Executive Vice Presidents, Federal Reserve Banks of Boston and Dallas, respectively

Mr. Judd, Advisor to the President, Federal Reserve Bank of San Francisco

Messrs. Feldman, Hilton, Krane, McAndrews, Mses. Mester and Mosser, and Messrs. Schweitzer, Sellon, and Waller, Senior Vice Presidents, Federal Reserve Banks of Minneapolis, New York, Chicago, New York, Philadelphia, New York, Cleveland, Kansas City, and St. Louis, respectively

¹ Attended Tuesday's session only.

Ms. Logan, Vice President, Federal Reserve Bank of New York

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June 23, 2009—Afternoon Session

CHAIRMAN BERNANKE. Good afternoon, everybody. This is a joint meeting of the FOMC and the Board, as has been our custom in the past, so I need a motion to close the meeting.

MR. KOHN. So moved.

CHAIRMAN BERNANKE. Thank you. Let me first welcome Brian Sack officially in his role as manager of the System Open Market Account. We look forward to a long and productive association.

I also want to mention that I know there's a great deal of interest in the Administration's financial regulatory reform plan and its implications for the Federal Reserve. Tomorrow at lunch after the meeting, I will update you on what I know about it, and then we can have some discussion if you'd like.

We have a substantial number of presentations today. The staff has made an extraordinary effort to provide us with a great deal of background information on the balance sheet, reserve management, exit strategy, and important related issues. If the Committee is willing, I'd like to go straight through the first set of presentations with clarifying questions only and then have as much Q&A as the Committee would like and then a general discussion. If that's all right, then let's begin with Brian Sack to report on market developments.

MR. SACK.¹ Financial markets improved further over the period since the last FOMC meeting, with risky asset prices rising on net, financial institutions raising new capital, and money markets continuing to heal. Those developments reflect, and in turn support, greater optimism about the economic outlook. However, one

¹ The materials used by Mr. Sack are appended to this transcript (appendix 1).

consequence of these events was that intermediate- and long-term interest rates came under significant upward pressure.

As can be seen in chart 1, Treasury coupon yields moved up markedly over the intermeeting period, with increases of 20 to 80 basis points. The run-up was initially concentrated in longer-term yields, but more recently it spilled over into the two-year yield as well. The rise in the two-year yield was driven in part by a shift in monetary policy expectations, as the “green shoots” theme continued to gain traction. As shown in chart 2, expectations of monetary policy tightening this year remain limited, but the market now anticipates nearly 200 basis points of tightening over 2010.

The upward movement in Treasury yields was the largest, however, at horizons beyond the next year or two, as can be seen in the shift in the yield curve in chart 3. The upward pressure on longer-term Treasury yields came from a variety of sources, including an improved economic outlook, an associated reduction in the risk of deflation, substantial increases in the supply of Treasury debt, the need to hedge mortgage convexity exposure as rates increased, and an ongoing reversal of the flight-to-quality flows. Our survey of primary dealers indicated that many of these factors were seen as “important,” as summarized in chart 4. An increase in upside inflation risk was also cited as a relevant, but less important, factor.

The upward pressure on yields occurred despite the fact that the Federal Reserve continued to take considerable amounts of duration onto its own books through the large-scale asset purchase programs. As shown in chart 5, the SOMA continued to accumulate longer-term assets through the three programs initiated by the FOMC. As the chart indicates, those purchases have proceeded at a relatively steady pace towards their mandated sizes. As summarized to the right in chart 6, the Desk has purchased \$170 billion of Treasury securities to date, \$90 billion of agency securities, and \$577 billion of MBS. Our dealer survey indicated that market participants are not expecting much expansion of the programs beyond the currently stated limits. The median survey response indicated no expected increase in the size of the agency and MBS programs and only a 15 percent chance of expansion of the Treasury program at this meeting, with the peak amount of Treasury purchases put at \$363 billion.

Given their current sizes, these programs have had different degrees of importance in their respective markets. For Treasury securities, the SOMA purchases have simply been overwhelmed by new issuance. As shown in chart 7, the supply of new Treasury debt is far outpacing the accumulation by SOMA, leaving the market to digest considerable amounts of new debt and putting upward pressure on yields. That is not the case for MBS, however, where the Fed’s purchases to date have been large relative to the size of the market and the flow of new supply.

This pattern may explain why the MBS purchases have had such a notable effect on the MBS rate. As shown in chart 8, the MBS current coupon rate fell sharply after the program was announced, both because the Treasury yield declined and because

the spread to Treasuries narrowed. That movement prompted a major refinancing wave, with nearly the entire universe of outstanding fixed-rate mortgage loans becoming refinaneable. The MBS rate subsequently remained near 4 percent, even as the Treasury yield began to move up, in part because of a perception that SOMA purchases would be used to hold the line at that level. More recently, though, the MBS rate began to rise, with two important factors amplifying that movement. First, the rise in yields reduced repayment risk, extending the duration of outstanding mortgages and causing mortgage holders and servicers to try to shed duration elsewhere—the convexity hedging mentioned above. Second, market participants came to understand that the Fed would not ramp up the pace of its MBS purchases significantly in reaction to upward pressure on the MBS rate, in contrast to the expectations of many. On balance, the MBS rate is 80 basis points higher than at the time of the last FOMC meeting. Much of that change has showed through to the primary mortgage rate, which has increased about 60 basis points.

Overall, our view is that the purchase programs have kept Treasury yields and mortgage rates lower than they otherwise would have been, though they are no longer at the very low levels that were observed ahead of the last FOMC meeting.

The move towards higher yields has been accompanied by considerable chatter in the market about inflation risks. As shown in chart 9, break-even inflation rates moved up notably with the backup in nominal yields, with the five-year, five-year forward measure (the Barclays measure) approaching 2.5 percent. However, some of the rise in recent months appears to reflect that the risk of low inflation has been pared and that the liquidity of TIPS has improved. Break-even inflation rates have not reached levels that would suggest that either inflation expectations or perceived upside inflation risks were unusually high. That interpretation is largely confirmed by the distribution of longer-term inflation outcomes from our dealer survey, chart 10. The chart shows the evolution of the distribution over the last three FOMC meetings. In general, respondents have been shaving down the left tail, with most of the mass making its way into the 2 percent to 2.5 percent bucket rather than into the upper tail. Still, it is important to note that the inflation outlook is now seen as much more balanced, as reflected in both the survey and the level of break-even inflation rates.

I will close my discussion of yields by taking a longer-term perspective. Although it seems that many factors are putting upward pressure on Treasury yields, the yield curve is essentially showing the same degree of steepness that has occurred around or just after the end of previous recessions, as can be seen in chart 11. Thus, despite the unprecedented fiscal deficits and the unprecedented expansion of reserves, the yield curve is not doing anything unprecedented. Of course, one potential explanation is that the large-scale asset purchase programs have prevented a more severe steepening.

The greater prospects for an economic recovery are also reflected in a broad set of risky asset prices. Corporate yield spreads, chart 12, came down significantly, with the investment-grade and high-yield spreads narrowing by 176 and 405 basis points,

respectively, over the intermeeting period. That narrowing has more than offset the increase in Treasury yields, leaving corporate borrowing costs lower. With more favorable costs, corporate issuers have brought a heavy flow of new bonds to the market in recent months. Equity prices also advanced on net over the intermeeting period, despite some backtracking over the past week or so. As shown in chart 13, the S&P index gained about 5 percent, continuing the recovery seen since the trough in March. The recovery in equities has been driven in part by the view that downside growth risks have diminished. One indication of this is that the negative skewness of equity outcomes implied by options (the light blue line) has fallen notably from the very elevated levels reached last fall. The willingness of investors to move back into risky assets, both here and abroad, has contributed to a weakening of the dollar, chart 14, with the broad dollar index off by about 5 percent.

The positive sentiment in markets has been driven in part by better prospects for banks. As shown in chart 15, share prices of the large financial institutions included in the Supervisory Capital Assessment Program (or SCAP) have moved sharply higher since March, far outperforming broader equity indexes. There may be several reasons for this outperformance, but the SCAP process clearly played a role. The test results provided some clarity to investors about the capital needs of those institutions and, overall, indicated that those needs were less severe than had been earlier feared. This information was greeted favorably by market participants. Since the release, many of those institutions have been able to raise new capital, as shown by the solid bars in chart 16, which has helped to fill the capital needs identified by the SCAP, the hollow bars. In total, the SCAP institutions have raised or announced plans to raise \$70 billion in new capital. In addition, they have issued more than \$35 billion in new debt, including \$25 billion that did not use the FDIC guarantee program. Lastly, 10 large financial institutions were approved to repay TARP funds and returned \$68 billion collectively to the Treasury last week.

The better sentiment about banks and other financial institutions has helped to improve conditions in money markets. In the market for unsecured lending, the three-month LIBOR–OIS spread continued to fall, as shown in chart 17, and has now dipped below 50 basis points—its lowest level since early 2008. However, the spreads on LIBOR at longer maturities still remain unusually elevated, and the liquidity and functioning of the LIBOR market is still strained. Secured funding markets show a similar pattern—ongoing improvement, but remaining far from normal, with considerable uncertainty about what normal will turn out to be in the new environment.

The improvement in term funding markets has allowed the markets to become less dependent on the liquidity facilities provided by the Federal Reserve. This is a natural development and, indeed, a positive sign, in that some of the facilities were priced to be relatively unattractive once market conditions became less strained. As shown in chart 18, the shrinkage has spanned almost all components of the liquidity facilities, with the total amount of short-term credit provided falling to about half its level at the beginning of the year.

Another sign of policy traction comes in the consumer credit markets. Recent TALF subscriptions have been larger and have covered a more diverse set of asset classes. As can be seen in chart 19, the total issuance of TALF-eligible ABS jumped to about \$30 billion in the second quarter. In addition, and perhaps even more encouraging, some ABS deals have been coming to the market without TALF support, bringing the total amount of ABS issuance for the quarter to about \$40 billion. Thus, there are signs that the consumer ABS market is at least starting to get back on its feet.

The liquidity being provided to the ABS market and the return of investor confidence in that market have caused spreads on triple-A-rated ABS to narrow considerably, as shown in chart 20 for auto and credit card paper. These improvements in the secondary market rates should help to make credit available on more favorable terms to businesses and households. However, improvement in the CMBS [commercial-mortgage-backed securities] market has been more tenuous. Spreads on senior CMBS have narrowed by much less from their peak and have moved higher of late. Newly issued CMBS were the focus of the most recent TALF subscription, and there was no participation. That outcome was expected, though, as it takes time for issuers to originate the paper that would be eligible. Given the strains in the CMBS market, we anticipate that CMBS activity in the TALF will pick up over time.

Overall, as shown in chart 21, the total balance sheet of the Federal Reserve has remained around \$2 trillion since last December. However, that pattern masks the significant rotation that is taking place in the composition of the balance sheet. As noted above, the share of the balance sheet associated with short-term lending operations (the orange area) is shrinking notably, while the System's holdings of longer-term assets (the blue area) continue to grow. Going forward, we expect the total portfolio to expand further, as the ongoing growth in the asset-purchase programs will outweigh further declines in the liquidity facilities.

That concludes my prepared remarks on financial market developments. Let me now turn to the separate issue of whether to expand the existing SOMA securities lending program to include agency debt securities held by the SOMA. A memo was circulated to the FOMC in advance of today's meeting to describe this proposal and its economic rationale.

The intention of the proposed change is to make SOMA holdings of agency debt available to the market in order to foster improved liquidity and secondary market functioning for agency securities. Through an auction format, dealers could pay a fee to borrow a particular security, offering a Treasury security in exchange as collateral. This allows the dealer to obtain individual agency securities that might be in short supply in the market.

The potential for scarcity problems in agency debt arises in part from limited new supply and in part from the Fed's asset-purchase program. Agency debt purchases of \$200 billion would represent approximately 35 percent of total outstanding agency benchmark debt. Dealers are already expressing some unwillingness to short agency issues due to concerns about their ability to close out such positions. And while fails-to-deliver in agency securities have not been substantial, we believe that they could rise if there were another bout of financial market strain. Indeed, agency debt does not benefit from the new fails penalty that was recently implemented for Treasury securities, possibly making them more susceptible to an episode of widespread fails. Making SOMA holdings available to the market would address these concerns, which should help to support market liquidity.

Let me make two additional points about the program. First, it involves little risk for the Federal Reserve, as it is swapping an agency debt security for a Treasury security, with a small haircut applied. Second, it puts the agency program on a par with the Treasury debt and MBS programs, as those already have comparable strategies in place. In particular, Treasury securities held in SOMA are already included in the securities lending program, and SOMA holdings of MBS can be made available to the market on a temporary basis through dollar roll transactions.

This proposal is not covered by the current Desk authorization and thus requires an amendment to the authorization, as indicated in our memo to the Committee. That concludes my prepared remarks.

CHAIRMAN BERNANKE. Thank you. If there are no clarifying questions, let me go next to Seth Carpenter to talk about the balance sheet.

MR. CARPENTER.² Thank you, Mr. Chairman. Earlier there was material distributed entitled "FOMC Briefing on Projections of the Balance Sheet, the Monetary Base, and Federal Reserve Income." For this meeting, the staff has again prepared projections of the balance sheet under various alternatives. Here we focus on the baseline and expanded purchase scenarios that were presented in the Bluebook. The baseline scenario involves maintaining the currently announced limits of the FOMC's asset purchase programs, while the expanded purchase scenario depicts a case in which the purchases of Treasury securities are expanded from \$300 billion to \$750 billion, consistent with alternative A from the Bluebook. The staff sent the Committee a memorandum that projects Federal Reserve income using the baseline balance sheet projections and various assumptions for interest rates. In this briefing, I will summarize the balance sheet and income projections.

The charts in exhibit 1 illustrate the underlying assumptions for the baseline and expanded purchase scenarios. The dotted lines present the projections made for the April meeting. Several factors account for the differences from the previous meeting's projections. First, we have made some technical adjustments to our

² The materials used by Mr. Carpenter are appended to this transcript (appendix 2).

assumptions for securities holdings, the most significant of which is a slower assumed prepayment rate for MBS. As a result, MBS holdings end the projection period almost \$200 billion higher than in our last projections. Second, we have also adjusted our assumptions regarding the credit and liquidity facilities given the recent lower-than-projected usage. Most notably, as shown on the second page, loan issuance under the TALF has been revised downward significantly because of the experience with the facility to date and revised staff views of likely use in the future.

As shown in exhibit 2, under the baseline scenario, the balance sheet peaks at about \$2.8 trillion at the end of this year. In subsequent years, TALF loans are repaid and securities mature, or are prepaid in the case of MBS, so the balance sheet contracts to just under \$1.5 trillion at the end of 2016. On the liabilities side, currency grows steadily and eventually returns to being the largest liability item. Reserve balances shrink reflecting the runoff in assets and the growth in currency. Exhibit 3 presents the projections for the expanded purchase scenario. The results are qualitatively similar, but total assets peak at a higher level at the end of this year and remain slightly higher than in the baseline for the projection period.

Corresponding projections for the monetary base are presented in exhibit 4. Continued large-scale asset purchases lead to rapid expansion of the base from August through the end of the year, with annualized growth rates of around 100 percent. Early next year, the contraction of the balance sheet resulting from the cessation of LSAPs and the runoff of liquidity facilities causes reserve balances to shrink more rapidly than currency expands. As a result, for each remaining year in the projection, the monetary base contracts.

The substantial changes to the size and composition of the Federal Reserve's balance sheet pose risks to the System's net income that were summarized in a staff memorandum to the Committee dated June 17, 2009. The memo concentrated on two risks. The first risk is that, as the policy rate is increased, the income that the Reserve Banks earn on largely fixed-rate assets becomes insufficient to offset expenses, most importantly the interest expense on reserve balances. The second risk is the possibility that increases in interest rates reduce the market value of the SOMA portfolio so that, in the event that the Desk needs to sell some of these securities to drain reserves to raise the federal funds rate, the System realizes capital losses. The analysis presented in the memo suggests that, using the baseline projection for the balance sheet, the first risk is not significant under most plausible scenarios, but the second risk is important to consider.

Exhibit 5 summarizes projections of Federal Reserve income and remittances to the Treasury under three different scenarios for interest rates. The first row shows the baseline with interest rates consistent with those in the Greenbook, that is, the Greenbook as it was iterating on Tuesday, June 16, just before finalization. The black line in the top left panel presents gross income for the Federal Reserve System, which is driven largely by interest income from the SOMA portfolio, and the red region represents total expenses, which is driven significantly by interest paid on reserve

balances, which leaves the grey region as net income for the System prior to distribution of dividends. To the right, subtracting dividends paid on Reserve Bank capital and other transfers—the red region—leaves excess earnings that are remitted to the Treasury as interest on Federal Reserve notes, the grey region. In the second row, which uses an interest rate path consistent with current market rates, remittances to the Treasury remain sizable and, in fact, exceed the average remittance to the Treasury over the past ten years. The bottom row, however, shows a scenario where interest rates rise sharply—in this case, the federal funds rate rises to as high as 8 percent by the end of 2011—and interest expense drives net income to zero, and, as shown in the bottom right panel, remittances to the Treasury are projected to be zero from 2011 to 2013.

The memo also presented approximate unrealized mark-to-market losses for the SOMA portfolio, which are summarized in exhibit 6. At the end of the first quarter of this year, the SOMA portfolio was in a modest gain position, illustrated by the blue line for the baseline starting slightly below zero—that is, with negative losses—because the legacy holdings of Treasury securities had an average coupon above market rates. Under the Greenbook projection, longer-term interest rates do not rise appreciably above current levels until 2013, and the portfolio shifts to a modest loss position around that time. Under the market-based scenario, losses mount more quickly, and before long the portfolio has unrealized losses of about \$100 billion. As a result, if one-third of the portfolio were sold to drain reserves and so one-third of the total portfolio losses were realized, those losses could conceivably wipe out the remittances to the Treasury. Under the high-interest-rate scenario, the red line, losses are even higher and mount more quickly. In such a case, the sale of securities could quickly lead to significant realized capital losses. As Jim and Spence will discuss, however, it is not necessarily the case that the Desk will need to sell securities, as other tools will be available when the Committee deems it appropriate to tighten the stance of monetary policy.

CHAIRMAN BERNANKE. Thank you. Let me turn now to Bill English to talk about the effects of high reserve balances on bank balance sheets.

MR. ENGLISH.³ Thank you, Mr. Chairman. I'll be referring to the exhibits that are labeled "FOMC Briefing on Possible Effects of Very High Reserve Balances on Bank Balance Sheets." As shown in the top left panel of your first exhibit, Federal Reserve actions in response to the financial crisis have led to a substantial increase in reserve balances held by depository institutions. And, as shown by the dashed lines, the rise in reserve balances is projected to continue through the end of this year, under either the baseline scenario considered in the Bluebook—the blue line—which reflects already planned purchases of Treasury, agency, and mortgage-backed securities, or the alternative scenario—the red line—which includes additional purchases of \$450 billion of Treasury securities later this year. I should note that the projections shown here have been updated from those presented in the memorandum

³ The materials used by Mr. English are appended to this transcript (appendix 3).

sent to the Committee on June 12, 2009, and are consistent with the balance sheet projections included in the June Bluebook.

All else equal, the projected rise in reserve balances implies an increase in the assets of depository institutions. To the extent that depository institutions or their creditors and counterparties are concerned about the resulting decline in the ratio of capital to assets, depository institutions may choose to reduce their lending or sell securities in order to limit the increase in their assets. Such concerns could be driven in part by the regulatory leverage ratio. As shown to the right, unlike the risk-based capital ratios, the leverage ratio is based on average total assets, including reserve balances. Thus, an increase in a bank's reserve holdings, all else equal, reduces its leverage ratio. Under the U.S. banking agencies' Prompt Corrective Action rules for insured commercial banks, banks must maintain a minimum leverage ratio of at least 5.0 percent to be "well-capitalized." While individual banks can reduce their reserve holdings, in most cases such efforts simply shift reserves to other institutions, leaving the aggregate reserve holdings of the banking sector unchanged.

To examine the possible effects of the anticipated increase in reserve balances, we projected the leverage ratios of commercial banks at the end of the first quarter of next year. As noted in the middle left panel, in doing so, we assumed that aggregate reserve balances would expand in line with the baseline or alternative Bluebook scenarios and that balances held by each institution would rise in proportion to the projected increase in aggregate balances. We assumed that the levels of other bank assets remain unchanged. In our projections, tier 1 capital declines over the next few quarters—reflecting write-downs, loan losses, and other factors—with the decline assumed to be about half as large as that projected in the SCAP results for the nineteen largest banking organizations in the more adverse scenario.

The resulting projections under the baseline scenario for reserve balances are summarized in the middle right panel. Even with the significant decline in tier 1 capital and the substantial growth in reserve balances expected by the first quarter of next year, shown in the first two rows, the aggregate leverage ratio, the bottom row, is projected to remain well above regulatory norms.

Nonetheless, as shown by the dashed blue line in the bottom left panel, under these assumptions, the aggregate leverage ratio does fall below the range seen over the past 10 years. However, this calculation does not take account of the likelihood that some portion of the capital raised in response to the SCAP will be downstreamed by bank holding companies to their subsidiary banks. If all such capital were downstreamed, the result would be an aggregate leverage ratio at the high end of the recent range—shown by the dotted blue line. (In these projections, we assume that repayments of government capital are made with resources at the bank holding company level and so do not affect the capital ratios of subsidiary banks.) The red dashed and dotted lines on the graph show the effect on the aggregate leverage ratio of a larger increase in reserve balances, consistent with the alternative scenario for the

Federal Reserve's balance sheet. These projections are somewhat lower than the baseline projections, but they suggest a generally similar conclusion.

As noted in the bottom right, we also prepared projections of the leverage ratios of consolidated bank holding companies, and obtained broadly similar results, even taking account of the recent repayments of government capital. Our projections of leverage ratios for individual commercial banks (not shown) suggest that they could fall to low levels relative to regulatory norms for some banks. Most notably, the projected leverage ratio for Bank of America is only 5.01 percent in our baseline projection in the absence of a capital infusion from its parent holding company. However, as noted earlier, individual depository institutions can take steps to reduce unwanted accumulations of reserves.

Now please turn to the top panel of your next exhibit. To learn more about how banking organizations view current reserve levels and how they might respond to further increases in reserve balances, we consulted with senior Federal Reserve supervisory staff at some of the largest banking institutions and with staff at the Open Market Desk at the Federal Reserve Bank of New York. These consultations indicated that banking organizations have not expressed material concerns to System staff about their own level of reserve balances or the overall level of reserves in the system. Indeed, some banks have intentionally maintained high levels of reserve balances as a liquidity buffer, while others have profited at times by exploiting the spread between the rate paid on excess reserves and the cost of borrowing in the federal funds market. Banks generally thought that they could reduce their reserve balances if they chose to by lending in funding markets, purchasing securities, or reducing interest rates on deposits. It is important to note, however, that banking organizations have not discussed with System staff the possible effects of the increase in Systemwide reserves that will accompany continued large-scale asset purchases. As the supply of reserve balances rises, some depository institutions may find it more difficult than they had anticipated to reduce the size of their balance sheets.

As summarized in the bottom left panel, this analysis suggests that depository institutions should not be significantly adversely affected by the anticipated levels of reserve balances. As a result, no policy response appears necessary at this time. However, considerable uncertainty remains. Reserve balances could rise further than currently projected if economic conditions called for additional asset purchases or Federal Reserve lending. And banks' losses could prove larger than we assumed—perhaps running closer to the level projected in the SCAP. Finally, with financial markets still fragile and pressures on institutions' liquidity still a concern, banking organizations may want larger-than-usual buffers of capital relative to regulatory norms. Given these uncertainties, the staff will continue to monitor the effect of Federal Reserve operations on the size of depository institutions' balance sheets and their willingness to provide credit.

If policymakers became concerned that increases in reserve balances were having adverse effects on banks' intermediation activities, several policy options, shown to the right, could be considered.

First, the Federal Reserve could drain reserves by several means, including outright sales of securities, reverse repurchase agreements, or—if it received authority from the Congress—by issuing Federal Reserve bills. Those options will be discussed in the presentation by Jim Clouse and Spence Hilton.

Second, supervisors could, on a temporary basis, exclude all or part of reserve balances from the calculation of the leverage ratio for all banking institutions. Providing temporary leverage ratio relief in this way could ease banks' regulatory-capital-related balance sheet pressures. However, a change in the calculation of the leverage ratio would be difficult to negotiate with the other U.S. federal banking agencies. And if relief were granted for reserve balances, even on a temporary basis, due at least in part to the risk-free nature of reserve balances, regulators might have to consider comparable relief for other risk-free assets to preserve consistency and reduce distortions. In making such changes, the simplicity and comprehensiveness of the leverage ratio would be lost.

Third, to avoid the difficulties that could be associated with a blanket change in the calculation of the leverage ratio, supervisors could, on a temporary basis, exclude all or part of reserve balances from the calculation of the leverage ratio on a targeted basis for selected banking institutions with particularly large inflows of reserve balances.

Finally, supervisors could issue guidance indicating that temporary decreases in the leverage ratio resulting from accumulations of reserve balances should not significantly adversely affect supervisory assessments of banks' capital adequacy, given the low risk posed by reserve holdings and the recognition by supervisors that the increase in reserve balances is the temporary result of monetary policy actions. Such guidance, perhaps in the form of an interagency statement, could acknowledge the impact of increased reserve balances on leverage ratios, explain the reason for the elevated levels of reserves, and note the very low risk associated with reserve balances. Thank you. That concludes my prepared remarks.

CHAIRMAN BERNANKE. Thank you, Bill. Let me turn now to Trish Mosser on large-scale asset purchases.

MS. MOSSER. The recent rise in long-term yields has highlighted a number of challenges to the large-scale asset purchase programs—challenges related both to policy intent and to implementation. In light of the recent changes in market and macroeconomic conditions, my briefing discusses a few potential changes (large and small) to the purchase programs that the Committee may consider going forward.

In order to help frame your thinking, and ours, about the purchase programs, the staff prepared a note discussing whether the effects of purchases come about primarily through changes to stocks or flows of assets. Basic theoretical models point mainly to stocks affecting interest rates. But practical market considerations, finance microstructure models, and our experience with purchase programs to date suggest that both the stock and the pace of asset purchases can effect yields. The purchase programs all produced significant announcement effects, suggesting that the expected decline in the stock of assets lowered yields. For Treasuries, the stock effect appears to be more important than the flow effect, perhaps because the Treasury market is highly liquid with good price transparency and predictable supply, so informational asymmetries and inventory frictions that are associated with flow effects are smaller. Also, the Treasury program is by far the smallest relative to the size of the overall market, so flows of purchases are likely to have a smaller ongoing impact on yields.

In contrast, both the MBS and the agency debt purchase programs are large relative to the size of their respective markets, and, in both cases, the size and pace of new supply is quite uncertain, leaving more scope for the Fed's purchases to have a significant ongoing effect on prices. As a result, it is not surprising that the Fed's purchases caused not only up-front announcement effects, but also ongoing reductions in MBS and agency spreads as markets adjusted to the pace of purchases.

As Brian noted in his presentation, in recent weeks when it became clear to market participants that the pace of MBS purchases would *not* be adjusted as yields edged higher, MBS (and mortgage) rates rose sharply. Of course, the convexity of mortgages and MBS was the main reason that the backup in mortgage yields was so large and so quick, but some of the increase in yields reflected adjustments to market expectations of the program, based on the Desk's flow of purchases.

Regardless of what changes, if any, the Committee decides to make to the purchase programs, our analysis, and particularly our recent experience, highlight the ongoing need for clear public communication about the policy intent and goals of the purchase programs as well as about their implementation. Moreover, given that both the stock and flow of Fed purchases appear to influence yields and spreads, we believe there are number of program changes that the Committee may wish to consider. Broadly speaking, these changes fall into two categories: (1) changes specifically related to size and flexibility of the programs—in other words, related to stock and flow effects of the programs, and (2) other implementation changes to enhance the effectiveness of the programs.

Let me start with the options related to the size and flexibility of the programs. If the Committee believes that the recent run-up in long-term yields represents an unwelcome tightening of credit conditions inconsistent with the appropriate stance of policy, then an expansion of the LSAP program may be attractive. Given its small size, the Treasury purchase program is a logical candidate for such an expansion. A large expansion—for example, of up to \$750 billion through year-end—would be a surprise to the market, and, in the staff's view, it would significantly lower long-term

yields. Of course, such an expansion could also increase concerns about debt monetization and perhaps inflation.

Alternatively, a more modest expansion/extension—to \$450 billion through year-end—might be attractive because it would raise fewer concerns about debt monetization. This change could be communicated as a continuation of the current program and an alignment of the end dates of all three purchase programs, with an additional note that all may be adjusted in the future depending on the economic outlook and financial conditions. This may be particularly attractive if you believe it is premature to plan and communicate the end of the Treasury purchase program. The Treasury program endgame will certainly move to the forefront of market and policy discussions if the Treasury program is kept unchanged.

Expansion of the MBS purchase program is another option that has the advantage of being (half) a step removed from debt monetization. However, given reduced expectations for new MBS issuance and the already large size of the program, the staff has some concerns that a larger MBS program would run the risk of SOMA purchases distorting market functioning. For reasons that we have highlighted in the past, we do not recommend expanding the agency debt program, given its large size and its impact to date.

While the staff does not recommend explicitly reallocating funds across the various purchase programs (e.g., reducing the MBS program and reallocating to Treasury purchases), the Committee might want to consider implementation strategies that increase the flexibility of the programs.

Regardless of what the Committee decides about the size of the purchase programs, it could consider a portfolio approach in which the timing, size, and particularly the composition of purchases are adjusted in response to market conditions, done in a manner that makes the most efficient use of the Fed's balance sheet. For example, in a scenario of rising yields and narrowing spreads on MBS and agencies, the Desk could shift toward purchasing Treasuries; in a scenario of falling yields and widening spreads, the Desk could shift purchases away from Treasuries and toward MBS and agencies; and in a scenario of declining yields and narrowing spreads, the Desk could simply purchase less of everything. This approach could have the added advantage of containing the future size of the balance sheet to the extent that it targets purchases where they are perceived to have the greatest policy impact. It could also help to reduce volatility and minimize market distortions of the purchase programs.

However, this approach also entails a significant complication in that such changes to Desk operations would presumably require the Committee to articulate to the Desk and to the market what its reaction function is. Formulating this reaction function would be difficult, partly because the appropriate levels of spreads and yields would depend on both macroeconomic and financial conditions. Setting (and communicating about) a policy stance that is dependent on macro and financial

conditions is what the Committee does in normal times, of course. But these are neither normal policy circumstances nor normal operating procedures. To pull this off in present circumstances may be quite complex.

Alternatively the Committee could move in the direction of giving the Desk more flexibility within asset classes by purchasing larger quantities when spreads and yields are rising and fewer assets when they are falling. This approach—if appropriately formulated, communicated, and executed—has the advantage that it could reduce volatility and consequently, perhaps, lessen the need for actually making large adjustments to operations. However, a flexible pace of purchases is likely to be credible only if the size of the purchase program is relatively large. As a result, the staff would not recommend such a strategy for the Treasury purchase program at its current size.

One final note on this topic: Selling put options is one way that the Desk could implement such a flexible, responsive approach to the purchase programs. A strategy of buying more when the yields rise in effect provides investors with an option to sell to the Fed at a particular price. Selling the option explicitly would not only allow us to capture the value of that commitment, but it also would provide a hedging vehicle to the market, which, in turn, might reduce hedging costs and thus risk premiums. But an options strategy involves the same communication challenges that I have already noted. If the Committee is interested in exploring this further, the staff would need a few weeks to address several legal and implementation issues.

Whatever the Committee's views are on the merits of changing the size or flexibility of the purchase programs, a couple of additional implementation issues deserve your attention.

First and most importantly, the Committee could consider how it would like to handle the phaseout of purchase programs, the so-called cliff effects. If one believes that the purchase programs affect yields only through the stock of assets, then cliff effects on yields are unlikely. However, if the flow of purchases affects yields at all—the staff believes we have seen some evidence of this—then it may be prudent to consider a slow phaseout of purchase programs in the weeks either preceding or just beyond the programs' end dates. In particular, if no changes are made to the Treasury purchase program, the staff believes there is a risk of a cliff effect in yields in September, so we request the Committee's views on the advisability of phasing out purchases slowly. In addition, the Committee might wish to discuss how it would like to communicate its intention regarding phaseout to the public.

Second, the staff recommends that agency MBS purchases be expanded to include securitizations of hybrid ARMs. To date, the MBS purchase program has been concentrated in purchases of 15- and 30-year securities. Adding hybrids would likely narrow what are currently very wide spreads in that sector and so ease credit conditions for borrowers who are not benefiting from the current program. Hybrids would also reduce the duration of our MBS purchases and thus limit the System's

exposure to income and capital risk. However, because this program is likely to be quite small, that effect would not be large. Purchases of hybrids are covered by the current directive and thus would not require further explicit authorization by the Committee. Although ARMs are slightly more complicated to purchase than fixed-rate MBS, a hybrid purchase program can be implemented in a matter of days. Our recommendation is to add purchases of ARMs with fixed-rate lockups of at least three years in order to avoid the risk that market participants would incorrectly infer signals about the near-term path of short-term rates.

A final implementation strategy that the Committee may want to consider is to increase the duration of Treasury purchases. If the Committee would like a bigger bang for the buck on yields, shifting Treasury purchases to maturities seven years and longer will remove more duration from the private sector and, according to portfolio theories, likely lower yields. On the other hand, such a shift runs the risk of distorting the yield curve, and, of course, it would increase the duration and interest rate risk of the SOMA portfolio.

I'll close by summarizing what we see as the key decision points and staff recommendations. First, if the Committee is interested in expanding asset purchases, Treasuries appear to be best choice; of course, this topic is more a subject for tomorrow's discussion than for today's. Second, a portfolio approach to asset purchases has notable advantages, including the potential for a larger impact, but it requires more articulation of objectives and responsiveness, which may be complex to achieve in the current circumstances. Third, the staff recommends tapering down purchases near the exit. And finally, buy hybrid ARMs.

Thank you, and I'm happy to take questions.

CHAIRMAN BERNANKE. Thank you. At the last meeting I promised we would focus today a good bit on our exit strategy, that is, on how we're going to unwind the policies that we have put in place. The last two presentations concentrate on that. Let me turn first to Jim Clouse and Spence Hilton to talk about reserve management tools.

MR. CLOUSE.⁴ Thank you, Mr. Chairman. We'll be referring to the package entitled "FOMC Briefing on Reserve Management Tools to Target a Higher Policy Rate." The FOMC memo on reserve management options described a number of possible tools that the Federal Reserve might employ to foster effective control of the federal funds rate even with a much expanded balance sheet. The operational details of these various options were described in a series of accompanying memos, but it may be useful to note how these various options fit within the usual demand and supply paradigm in the reserve market.

⁴ The materials used by Messrs. Clouse and Hilton are appended to this transcript (appendix 4).

In simple models, as shown by the red line in the top panel of exhibit 1, the hypothetical aggregate demand for reserves with interest paid on excess reserves at the so-called IOER rate should asymptote to just a touch above the IOER rate. In practice, however, the actual demand curve seems to be more like the black line that extends somewhat below the IOER rate. For much of the fourth quarter of last year, for example, federal funds regularly traded 50 basis points or more below the IOER rate. And in recent months, the effective federal funds rate has been about 10 basis points below IOER on average. As best we can tell, this phenomenon has stemmed from a confluence of factors: In particular, GSEs and others that earn no interest on overnight balances may have an incentive to lend in the funds market at rates below IOER; in addition, various impediments to arbitrage in the funds market—line limits, banks' concerns about capital constraints, and possible adverse perceptions associated with significant overnight borrowing in the funds market—seem to have undermined the usual market forces that would ordinarily be expected to keep the federal funds rate close to the IOER rate.

Consistent with this simple diagram, the various options discussed in the memo are classified under two basic headings—those that aim to strengthen and shape the demand for reserves and those designed to reduce the supply of reserves. As shown in the middle panel, the demand-side options are aimed at shifting the demand curve to the right, or making the curve “flatter,” that is, more interest-elastic, around the IOER rate, or some combination of the two.

Options aimed at shifting the demand curve to the right include increasing reserve requirement ratios and establishing a system of voluntary requirements. Simple calculations suggest that increasing required reserve ratios under the current structure to the maximum levels allowed under the Federal Reserve Act—14 percent for transaction deposits and 9 percent for nonpersonal time deposits and net Eurocurrency liabilities—could increase required reserve balances quite substantially. Alternatively, as noted in the work presented to the FOMC in April of 2008, the Federal Reserve could develop a system of voluntary reserve requirements. Similar to the current program of required clearing balances, depository institutions in this system could establish a voluntary requirement ahead of each two-week maintenance period. The rate of remuneration for balances held to meet such voluntary requirements would need to be above the rate of remuneration on excess reserve balances in order to induce banks to establish a significant level of voluntary requirements.

Options that might tend to flatten the demand curve include the payment of interest on reserves for all account holders. Payment of interest on balances held by institutions such as Fannie Mae, Freddie Mac, and the Federal Home Loan Banks would likely increase their desired holdings of Fed balances and could induce them to arbitrage in the funds market if the federal funds rate were to dip below the IOER rate. As described in the note by Jamie McAndrews, the Federal Reserve may also be able to flatten the demand curve by establishing special accounts that would allow federal funds transactions to be collateralized by balances held at the Federal Reserve.

As shown in the bottom panel of the exhibit, the various supply-side tools described in the memo—issuance of Fed bills, the development of term deposits, an expanded Supplementary Financing Program, expanded use of reverse repurchase agreements, and asset sales or scaled back liquidity programs—all would work by shifting the supply of reserves to the left.

In the case of Fed bills, this would be accomplished through the issuance of short-term debt obligations of the Federal Reserve that could be purchased by a wide range of investors. Fed bills could be purchased by depository institutions but would not count toward meeting reserve requirements. Fed bills would be a very powerful tool for reserve management for the Federal Reserve but would require new legislation.

A closely related tool discussed in the note by Steve Meyer would be a system of term deposits. Term deposits would be issued only to depository institutions, perhaps via an auction mechanism or by posted rates. These term deposits would not be eligible to satisfy reserve requirements and likely would be structured as nonnegotiable instruments. For example, two-week term deposits could be offered at the start of each two-week maintenance period. Of course, the return on such deposits would need to be high enough to induce banks to shift a significant portion of their holdings of overnight reserve balances into a term deposit.

As yet another reserve-draining mechanism, the Federal Reserve could explore an expanded SFP in which the Treasury would issue special bills and place the proceeds with the Federal Reserve. To be fully satisfactory from the Federal Reserve's perspective, the Treasury would need to be obliged to meet Federal Reserve requests for SFP issuance, and the bills issued under an expanded SFP should be excluded from the federal debt ceiling.

Another reserve-draining mechanism that could be employed would involve expanded use of triparty reverse repurchase agreements with Treasury, agency, and agency-backed MBS securities. As noted in the background memos, reverse RPs against Treasury and agency collateral will be feasible in the very near future. The ability to arrange for triparty reverse RPs against agency MBS may take longer to put in place—perhaps by the end of this year. In the case of agency MBS, a very similar reserve-draining mechanism would involve temporary sales of our MBS holdings in the dollar roll market.

Finally, the Federal Reserve could conduct outright sales of assets or take steps to scale back credit provided through various liquidity facilities. These mechanisms would almost certainly be successful in draining reserves but, as Spence will describe, would entail a number of important policy judgments.

MR. HILTON. Thank you Jim. If excess reserve levels were still high when the Committee again wishes to target short-term interest rates at levels above their effective minimum, then the starting point for raising market rates would likely be a

corresponding increase in the interest rate paid on excess reserves. This is certain to put upward pressure on bank borrowing rates, including the overnight federal funds rate. Under improved conditions in financial markets, this by itself might well provide sufficient control over short-term rates, regardless of the levels of excess reserves.

But if the Committee were dissatisfied with its control over market rates—that is, should something like the experience of last fall recur—then the Committee would want to be in a position to respond quickly to exert tighter control. For this reason, development of some of the tools that have been described is proceeding, even in the absence of any certainty that they would be employed when the time comes to tighten policy.

Among the various measures described above for reducing excess reserves, some appear to offer greater potential in terms of their scale or in terms of their availability in the near term than others. Several options introduce other issues apart from narrowly operational ones that would need to be addressed before they might be employed on a large scale, and we are beginning to look at some of these. And for all the tools aimed at reducing reserve supply, we are not certain about the level of excess reserves that would be consistent with tight control over the federal funds rate; however, we can be confident that large reductions in excess reserves would eventually increase their scarcity value and, with it, short-term market rates.

I will now quickly review the feasibility of some of the options that Jim presented with these additional issues and challenges in mind.

Issuing Fed bills or a revised Supplementary Financing Program exempt from debt ceiling limits are attractive options partly because, unlike reverse RPs, they avoid any need for collateral and its administration, which should also make it more appealing to a broader investor base. But either approach would require legislative action that appears to be problematic at this point.

Selling SOMA assets on a large scale is operationally feasible even today. But use of SOMA asset sales as a key tool to drain reserves could be limited by the possible effects on longer-term interest rates that would be hard to predict and on trading conditions that such sales would likely have in those markets. In addition, asset sales could have significant effects on Federal Reserve capital, as described by Seth.

Arranging reverse RPs against SOMA assets, including agency MBS, on a large scale likely would require developing counterparty relationships beyond the traditional primary dealer ones. The dealers themselves are not natural lenders. They could act as conduit between the Fed and lenders, but their willingness to play this role could be limited because of the effect it would have on the dealers' own balance sheets. Ideally, we would want to reach lenders to banks, especially those currently receiving less than the interest rate on excess reserves on their lending. This includes

the GSEs as possible counterparties, either as part of a broader reverse RP program or via separate operations arranged with these institutions.

Arranging reverse dollar rolls with the agency MBS we accumulate is something we could do now. We are uncertain about how large a presence we could have in this market—this is something we are exploring—and the accounting treatment could require us to realize any capital losses on the agency MBS we delivered even if just on a temporary basis.

The counterparties for term deposit arrangements that Jim described are, of course, the banks and other depository institutions directly. At issue is what interest rate incentive would be needed to induce depository institutions in the aggregate to shift excess reserve balances into these term deposits, and specifically, how far above the interest rate on excess reserves this rate must be. It's hard to calibrate depository institutions' demand. But experience with interest rate corridor systems suggests that maybe even spreads in the neighborhood of 50 basis points could incent banks to place most of their excess reserves deposits into term deposits. This same observation also holds for the two options Jim mentioned for increasing banks' demand for reserves: the system of voluntary reserve targets or raising reserve requirements. In either case, the question to be solved is the rate of remuneration on reserves held for these purposes relative to the interest rate on excess reserves.

To sum up, in the future under more normal financial market conditions, the IOER framework could be a more viable tool for controlling the overnight federal funds rate or other short-term interest rates than it appeared to be last autumn. Moreover, some potential exists for improving arbitrage in funding markets to tighten the relation between the IOER rate and overnight bank borrowing rates. But the System could bring additional tools to bear that collectively could be used to reduce excess reserves on a large scale. But apart from the remaining operational issues to be addressed, developing some of these tools to their full potential could involve additional issues, such as moving beyond traditional open market counterparties.

CHAIRMAN BERNANKE. Thanks very much. And batting clean-up, Brian Madigan is going to talk about our credit and liquidity facilities.

MR. MADIGAN.⁵ Thank you, Mr. Chairman. I'll be referring to the material labeled "Material for Briefing on Staff Proposal Regarding Liquidity Facilities." A number of the credit and liquidity facilities that the Board of Governors and the Federal Open Market Committee have established are scheduled to expire later this year. The PDCF, the TSLF, the AMLF, the MMIFF, the CPFF, and the dollar liquidity and foreign currency liquidity swap lines are scheduled to expire on October 30. The TALF is scheduled to expire on December 31. However, the TAF and the authorization for the Federal Reserve Bank of New York to lend to Fannie Mae and Freddie Mac have no fixed expiration date.

⁵ The materials used by Mr. Madigan are appended to this transcript (appendix 5).

As noted in the memorandum and in various staff briefing documents, the usage of most of the liquidity facilities has declined in recent months as market conditions have improved. Indeed, amounts outstanding under several of the facilities have contracted noticeably further in the days since we completed our memorandum.

In considering whether to modify, extend, suspend, or terminate the various programs, policymakers will need to balance various considerations.

First, to the extent possible, policymakers will want to avoid contributing to market distortions by providing liquidity at terms that would be attractive in routine circumstances. To an important degree, several of the programs were designed with terms that become less attractive to borrowers as market conditions improve. The decline in usage of the foreign swap lines, the CPFF, the PDCF, and the TSLF reflects this factor.

Second, in order to extend the 13(3) facilities, the Board must judge that conditions remain “unusual and exigent,” and the lending Reserve Bank must determine that “adequate credit accommodations” are not available from other banking institutions. The law does not define either of these terms, leaving considerable room for policymakers’ judgment.

Third, even though market conditions have improved notably over the past nine months, they arguably remain fragile and dependent on government support. With the economy in a severe recession, credit losses on commercial real estate and other credits are likely to mount substantially, leading to erosion of bank capital and continued uncertainty about the health of individual banks. In these circumstances, it seems likely that markets could remain quite jittery for some time. In the absence of backup liquidity facilities, concerns about counterparty credit risk could remain substantial, and systemic risk could increase from its currently diminished level. As is often the case, the period over year-end could also pose heightened risks.

In view of these considerations, the staff has proposed that the Board and the FOMC extend a number of the Federal Reserve’s liquidity facilities to a point distinctly after year-end—February 1, 2010. The staff also recommends, however, that certain other facilities be suspended, terminated, or modified.

As shown in the first row of the table, the staff recommends that, given the continued strains on the banking system, the more liberal terms for primary credit—the relatively low spread of the primary credit rate over the target federal funds rate and the availability of primary credit loans with terms of up to 90 days—be maintained for the time being. However, the staff believes that eventually, perhaps early next year, it will be appropriate to gradually increase that spread and shorten the maximum maturity.

As indicated in row 2, the staff recommends that the size of TAF auctions be reduced at this time from their current \$150 billion to \$125 billion. Even that amount would be well above recent bid amounts, and the staff believes that auction sizes probably can gradually be reduced further later this year. However, in view of the continued fragility of the banking system, the staff believes that it would not be prudent to announce at this time a fixed or even notional schedule for winding down the TAF. With regard to the longer-term status of the TAF, as noted in the right-hand column, the staff is currently leaning toward an eventual recommendation that in the steady state the TAF be maintained but at a low level, to maintain the operational readiness of the program for potential use in future periods of stress. Coming back to the immediate proposal, an open issue is whether to accompany the reduction in TAF size with an increase in the minimum bid rate, say, to IOER plus 10 basis points. Such a spread over the IOER rate would discourage institutions from using TAF as an essentially free means of securing a large liquidity buffer. It would also move in the direction of pricing TAF at a penalty so that institutions would not rely on the facility when market sources of funds are available. An argument against charging a penalty is that the program is an auction facility and not a standing facility. Moreover, charging banks a penalty rate conceivably might stigmatize the facility.

With regard to the foreign swap lines, row 3, the staff recommends extension through February 1. The major foreign central banks have priced their dollar provision at appreciable spreads over OIS, and usage has accordingly declined substantially as market conditions have improved. Maintaining the swap lines into early February would help contribute to financial stability, while the penalty pricing should continue to discourage unnecessary reliance on foreign central banks' dollar liquidity programs. Consultation with our 14 central bank counterparties indicates that all are willing to extend the facilities, and some of them are eager to do so. The staff plans to conduct a study beginning later this year on the desirability of maintaining some swap lines on a permanent basis.

Moving to the dealer facilities, the staff proposes that authorization for the PDCF and the TSLF, rows 4 and 5, be extended to February 1. The PDCF is an important backstop for maintaining dealers' liquidity during a period of potentially continued market stress. However, to increase the Federal Reserve's credit protection and to discourage unnecessary use of the facility, the staff proposes to increase the haircuts being charged on most types of investment-grade and noninvestment-grade collateral. For investment-grade collateral, these revisions will utilize the work recently done for discount window haircuts by the Subcommittee on Risk Management.

With regard to the TSLF, the staff recommends that the program be extended through February 1, but it believes that operation of this program can now be scaled down significantly. In view of the improvements in the functioning of the repo markets for collateral eligible for open market operations and declining usage, the staff proposes to suspend both schedule 1 TSLF operations and auctions under the TSLF Options Program (TOP). Operations under these programs could be resumed if warranted by market conditions, after consultation with the Board and FOMC if

possible. The repo market for non-OMO-eligible collateral has not improved to the same degree as that for schedule 1 collateral, and dealers continue to employ the program, albeit at a low and declining level. Accordingly, the staff believes that schedule 2 auctions should continue, but that the amount and frequency of such auctions can be reduced to one auction of \$75 billion every four weeks, and that the Desk could seek to scale back amounts further over time as market conditions allow.

Lines 6 through 8 cover the facilities related to the commercial paper market and money market funds. The staff believes that the situation with respect to money market mutual funds remains somewhat fragile. The experience last fall demonstrated that money funds, which are close cousins of banks, are exposed to runs that can threaten the stability of the entire financial system. Moreover, the Treasury believes that it does not have the statutory authority to extend its money fund guarantee program, which expires on September 18. In these circumstances, the staff thinks that continued Federal Reserve liquidity support for money funds is warranted and recommends that two of the facilities be extended through early next year. Unfortunately, various legal and practical constraints have resulted in somewhat awkward designs for these three facilities.

To be sure, the AMLF, line 6, has been an effective vehicle for helping to stabilize money market mutual funds. However, it also has design features that make the program difficult to operate solely as a backup liquidity facility. In particular, under the AMLF the Federal Reserve lends through depository institutions and other intermediaries rather than directly to money funds, and money funds are required to sell the ABCP to the depository institutions at amortized cost in order to limit the risk of breaking the buck. As a result of these features, simply raising the interest rate charged to the depository institution above the currently charged primary credit rate in an effort to make the facility less attractive would not work, or at least it would not work well: Depository institutions would only be willing to purchase ABCP with yields that are above the new interest rate, and there is not much eligible ABCP held by money funds with yields much above the primary credit rate. On the other hand, altering the amortized cost requirement may also be problematic because it would increase the likelihood that funds using the AMLF would break the buck, thus reducing the effectiveness of the facility. Accordingly, the staff has proposed a different approach to the AMLF: establishing redemption thresholds that would have to be exceeded before a money fund could use the program. These redemption thresholds should ensure that the facility is used to help meet money funds' liquidity needs and thus prevent runs, rather than purely as a credit backstop that money funds can use to shed paper at risk of downgrade.

The CPFF, line 7, has facilitated continued issuance of commercial paper. Moreover, it has been priced at rates that increasingly appear to represent penalties for most borrowers as market conditions have improved, and amounts outstanding have declined steadily. In order to help ensure that the commercial paper market is not disrupted between now and year-end, the staff proposes that the facility be extended through February 1 without change. If market conditions continue to

improve but some borrowers keep relying on the CPFF, the New York Fed might counsel CPFF borrowers to seek alternative sources of financing.

When it was designed, the MMIFF, line 8, was regarded as a useful liquidity backup for money funds. However, the decline in interest rates over the intervening period implies that money funds now hold very little paper that meets the requirements of the facility. Therefore, the MMIFF is no longer likely to be an effective means of supporting money funds in the event of a run. Moreover, money funds are concerned that usage of the facility would entail some stigma. And, finally, the facility is costly to maintain. As a result of these considerations, the staff recommends that the authorization for the MMIFF not be extended.

Currently, the TALF, line 9, is scheduled to expire at year-end. Because the TALF does not provide short-term funding, it does not seem necessary to extend the TALF over year-end simply to align its expiration with the other facilities. However, market participants have noted that it can take many months to assemble some of the deals to be financed by the TALF and, from that perspective, the year-end deadline might soon bind undesirably. After further analysis of this issue, the staff might bring to the Board a separate proposal for a modest extension of the TALF.

Finally, the authorization to lend to Fannie Mae and Freddie Mac, line 10, remains in effect. With the Treasury now authorized to lend to the GSEs, the staff suggested that the Board consider rescinding this authority immediately. However, the staff subsequently learned that the Treasury is concerned about possible adverse effects of a rescission of the authority at this time; a legislative proposal for restructuring the GSEs has not yet been put forward, and in these circumstances a rescission could prompt questions about the strength of government support for the GSEs and hence be destabilizing. The Board might consider it prudent to defer action on this recommendation for the time being.

Drafts of Board and FOMC resolutions to implement these proposals were provided to you last week.

That concludes the staff presentation. We would be happy to respond to your questions.

CHAIRMAN BERNANKE. Thank you very much, and thanks again to the staff for the extraordinary amount of very useful work behind these presentations.

We will go over specifically what resolutions will be needed to address the program recommendations. But before we go into Q&A, I just want to ask Trish and Brian what you're asking for today. You're asking for a vote, I understand, on the securities lending for GSEs. The

other things that you mentioned, Trish—like the portfolio approach, tapering, hybrid ARMs—are you just looking for input at this point, or are you looking for a decision?

MS. MOSSER. For the hybrid ARMs, we are looking for input. It's currently authorized, but we'd like the Committee's views. For the portfolio approach, if it goes across asset classes, it's going to require very substantial communication by the Committee, I believe, so that's really much more in the realm of the policy discussion, because it would be effectively making sizes flexible and fungible. Regarding more flexibility within asset classes, again, under the current authorization, we have that authority, but we'd be interested in the Committee's input.

CHAIRMAN BERNANKE. Okay. Good. Questions for the staff? President Fisher.

MR. FISHER. Mr. Chairman, thank you. I'd like to start with Brian. First, in your presentation, you did not mention—or maybe I missed it—that the pace of corporate bond issuance picked up. The spreads have come down—that was well covered—but tell us a little bit about the tone and the pace of the market. Second, have rates themselves come down along with the narrowing of spreads?

MR. SACK. The pace of corporate bond issuance has picked up. May was a very heavy month, about \$40 billion of issuance. That strength seemed to spill into June. Anecdotally we're seeing this bond issuance used for a variety of purposes. In part it's being used to pay down bank loans and pay down CP. We are also seeing lots of holding of liquid assets. This activity may just be some rotation or substitution on corporate balance sheets, but the pace of bond issuance certainly has picked up in response to the more favorable borrowing rates. As your question suggested, certainly the collapse in spreads has been sufficient to outweigh the increase in Treasury yields. So, yes, corporate bond costs have declined.

MR. FISHER. Trish, our stated objective was to lower private credit rates and to increase credit availability, and further in your presentation you mentioned two specifics on that. One was obviously mortgages and the other was corporate credits. So we might conclude that we have been successful on the corporate credit front. Is that a fair assessment, or is it too early to tell? When you talk about lowering rates in your presentation, Trish, I'm a little confused. Our objective as I understood it was never to seek to lower rates on Treasuries deliberately. It was to have an effect on the private credit markets. Do I understand that correctly?

MS. MOSSER. Yes, that's correct. For corporate bonds, clearly, both yields and spreads have come way down, not just because of our actions presumably, but particularly because of the recovery in equity markets. I guess we can take credit for some of that. On the mortgage side, however, the spreads are or became effectively as low as we reasonably believe that we could push them with both the agency debt and the agency MBS program. That means that additional purchases are going to have very large side effects; as we have discussed in the past, that makes us very concerned about exit and about market functioning and keeping the market healthy. So at this stage our ability to lower private credit rates in the mortgage sphere is extremely limited unless our impact in the Treasury market directly is bigger.

MR. FISHER. Mr. Chairman, I don't know if you want to stick to that subject with other questions, or may I go ahead and ask the other?

CHAIRMAN BERNANKE. If you have other questions, go ahead.

MR. FISHER. If I could quickly ask Jim and Spence—on the demand side, am I missing something here? Wouldn't the simplest solution be to seek an increase in reserve requirements? What's the drawback? The paper outlines the pros, but it wasn't clear to me what the cons are.

MR. CLOUSE. I will comment. Spence may have some other points. The existing regime for reserve requirements is very hard to rationalize. It's based on the monetary policy implementation of the early 1980s and very much focused on transactions deposits. I think that using that kind of creaky, old structure to generate a huge increase in required reserves would be a little awkward. And then there are the communications challenges associated with why we would be raising reserve requirements by a huge amount, even though they are being remunerated—it still might be awkward to explain. Spence may have some further comments.

MR. HILTON. I would also point out the inflexibility to change the level and the inflexibility in terms of the scope that it provides the reserve requirement structure in banks in managing their reserve accounts. I would agree that, yes, it would work in the technical sense of giving us some leverage over short-term interest rates, but I would say that, with the authority that we have to pay interest on reserves, we could do a lot better and come up with something that's more flexible.

CHAIRMAN BERNANKE. The Vice Chairman has a two-hander.

VICE CHAIRMAN DUDLEY. I think another issue is, of course, that the reserve requirements wouldn't fall precisely on those who have the excess reserves. So you'd be creating a lot of frictional cost by doing it that way.

CHAIRMAN BERNANKE. Governor Kohn.

MR. KOHN. When we had reserve requirements on nonpersonal time deposits, it was kind of a nightmare administratively—there were too many ways around it, and it was very hard to define what was inside and outside. Now, we don't have the tax on reserves that we used to have, but I still think it would be very, very cumbersome, and I'm not sure what the advantage would be relative to just paying interest on term deposits.

MR. FISHER. So the answer is no. Thank you. And then a question for Brian Madigan. When we talk about an increase in the primary credit spread—and I realize you're not recommending that currently—have you considered the effect it would have on smaller and regional banks? At least through our discount window, we see some increased activity there, and we're just a small part of the System. So I wonder if we've taken that into account in that recommendation.

MR. MADIGAN. Very much so, I would say.

MR. FISHER. I'm just wondering if we've thought about the politics of this, now when they're a little bit sensitive about a new consumer protection agency and so on.

MR. MADIGAN. Well, not so much the politics, but the economics. It's not just the 11th District. I think there has been a fairly broad-based increase in terms of usage of primary credit by small institutions because they find the rate attractive. The question is whether that's a good thing or a bad thing. I think from the point of view of central banking, our general perspective in redesigning the discount window facility some years ago was to set up the primary credit program as a Lombard facility that institutions wouldn't find attractive in routine circumstances but would turn to only as a backup. Pricing the primary credit rate at a level that is consistent with that was one of the challenges in designing the primary credit program initially. It surely seems to be the case that as that spread narrows, exactly as you would expect, banks increasingly tend to use that as an ongoing source of funding, and that is, I think, the consideration that needs to be balanced.

MR. FISHER. At the same time, we would be maintaining the TAF, but increasing the rate so that there would more of a penalty associated with it. Did I understand that correctly?

MR. MADIGAN. Possibly increasing the penalty. I think that is open for discussion at this point.

MR. FISHER. And who are the most active users of the TAF?

MR. MADIGAN. It's used by some large domestic U.S. banks as well as by foreign branches.

MR. FISHER. That would be one of my concerns—the optics of having a facility, which we, at least, have seen used by foreign branches, and maintaining it even though you might make it a little bit more difficult, while at the same time phasing out something that helps smaller and regional banks. I just wonder if there isn't a conflict there.

MR. MADIGAN. My assumption is that the TAF would largely be wound down over roughly the same period of time. The Federal Reserve might ultimately choose to maintain a TAF in the steady state, but at a very low level. It wouldn't be a significant source of funding for large banks, foreign banks, or anybody.

MR. FISHER. If I may just ask one more question, Mr. Chairman, of Brian, which is on the FX swaps. In your judgment, to what degree have the comparable ECB facilities and the IMF lending program substituted for or buttressed or deterred the effectiveness of our program? In other words, we see less demand currently. Is it because of those two facilities? Maybe your colleague to your right might have a view.

MR. SHEETS. We have seen a dramatic decline in the outstandings under our swap facilities—from about \$250 billion at the last meeting to about \$120 billion now; and just one other historical data point is that the peak was around \$580 billion in December. My sense is that this sharp reduction really is a reflection of healing in global dollar funding markets. I think the policies that have been put in place with respect to IMF lending capacity have been important

in soothing nerves of investors globally, but I think that's more for the emerging market economies than, say, European markets, where the swap lines have been so important. In addition, the ECB has some small swap lines with a number of European countries, but, again, I don't see them as playing significantly into the demand for dollar funding. The bottom line is that healing in the dollar funding markets has been the key driver there.

MR. FISHER. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. President Lacker, did you have a two-hander?

MR. LACKER. Well, I was going to say that we tried increasing reserve requirements when excess reserve holdings were really large once in the late 1930s, and it didn't turn out so well.

CHAIRMAN BERNANKE. It did sop up the excess reserves, though. [Laughter]
President Rosengren.

MR. ROSENGREN. I have a question for Brian and Trish about your figure 5 on the large-scale asset purchases. It's interesting what a straight line that is. Over the last six months, obviously, the economic forecast has changed—interest rates have moved, financial conditions have changed—and yet our program has been invariant to all of those changes. So my first question is whether you think that you're restricted from being able to do anything other than a straight line program. I thought you had more flexibility, but I want to get your sense of whether you have the flexibility currently to be able to vary the amount that you're purchasing or not. I would say that, in talking to people in the financial community in Boston, one of the surprises was that the purchase program was invariant to the rise in interest rates that we've recently experienced, which certainly sent quite a message. Did you debate whether you had the

flexibility to do anything to, in effect, resist some of that increase, both in the Treasuries and the mortgage-backed securities?

MR. SACK. We have interpreted the directive as having some flexibility, but it is relatively limited, in that we varied the approach that we take to purchases and the pace of purchases to respond to problems with market functioning. So we do vary the purchases to ensure that markets can continue to function and that we're not causing too much strain in the markets. One concrete example of this is that the approach to agency debt purchases has moved to a somewhat more flexible one that has reduced the pace and that raises the possibility of not getting all the way to the \$200 billion because of what we've seen in the development of the functioning of that market. So we've taken some limited flexibility in terms of responding to how markets function.

I think the more difficult issue is whether to exercise any flexibility in response to changes in market interest rates—that is, beyond the reaction to market functioning, whether the Desk should respond and try to resist increases in, say, MBS rates or Treasury rates. There I think our view is that we certainly don't have enough guidance from the Committee about the extent to which that responsiveness should be implemented or the yield levels at which purchases would ramp up. We have not taken a dynamic market-responsive approach in that regard, and that's why this is one of the issues that Trish raised in her briefing, namely, whether the Committee would like to consider moving to a more flexible approach. She raised the issue of doing that across asset classes, but she also raised the issue of doing that within an asset class to be more responsive to interest rates.

MS. MOSSER. One follow-up remark to that: On a daily basis in implementing the MBS purchase program, particularly during the refinancing wave, we were sensitive to supply

and spreads, and we would buy somewhat more on certain days and a little less on other days. But, to be honest, that shows up as a very tiny bump in the overall pace of purchases. As long as spreads were continuing to narrow overall, we did not make very large changes from week to week and month to month in quantities. Even though there was some daily movement, the changes we made were small ones.

In the Treasury program, quite honestly, given its relatively small size, we didn't feel that we had the flexibility nor that flexibility was necessarily a wise approach, since, frankly, it would not be credible, given chart 7—the size of it is just too small to have an appreciable effect on the level of yields. When we were being flexible in agency MBS, it tended to be in response to spreads more than to the level of yields.

CHAIRMAN BERNANKE. Vice Chairman, you had a two-hander?

VICE CHAIRMAN DUDLEY. Yes, just very quickly. On the agency MBS, I think there is some notion that the rate of purchases will somehow be loosely linked to the amount of originations and the effect on spreads. So we are a little bit ahead of schedule in terms of doing the \$1.25 trillion, but that's also because originations were very, very strong, and they'll probably be weaker in the second half of the year. So the purchases will probably slow down a little bit.

To your point, President Rosengren, it would be really hard to accelerate purchases in response to a backup in yields, because that would then run into the conflict of having only so much authority over such-and-such a time period. I mean, talk about potentially having severe cliff effects: I'm going to buy more as rates go up? What happens if rates go up more? Then I'm going to buy more, and then I'm also going to be out of ammunition. I think actually putting

that in practice without the FOMC sort of dynamically altering the limits of how much the Desk could do would, I think, be very, very difficult.

MR. ROSENGREN. Well, we could always reload. So there is an option.

VICE CHAIRMAN DUDLEY. Right, but the Desk does not want to make a presumption that you're necessarily going to reload, and it's probably inappropriate for the Desk to make that presumption. So I think it's a pretty complicated thing to do in practice.

MR. ROSENGREN. We do have a long tradition of leaning against the wind, and this program seems not to be very interested in leaning against the wind. I thought you had enough flexibility to do that. Personally I would hope that you would have the flexibility to do that and that we might do a little bit more of it.

In terms of your hybrid, I think it's a very good proposal. You did note it's a very small part of the market, and, looking at data from McDash confirms that it's an extremely small part of the market. That is a part of the market where, if we wanted to push rates down more aggressively, we could do so with relatively low costs. It seems that \$1¼ trillion in mortgages is a lot to support market functioning. So I actually have a broader goal than market functioning, which is to get the cost of housing down for people who might want to purchase houses.

If we're worried about market functioning in the 15- and 30-year area, it does seem that the 5- and 7-year area is one where there's virtually no activity now; earlier this decade you could get a 7-year ARM for 4½ percent, no points, no closing costs. We haven't hit anything close to that in this period. Given where the economy is, I don't quite understand why those ARMs haven't come down and why they're not priced more favorably. It may be reputational effects from the subprime market. There might be a reason to stay away from 3-year ARMs, because the "3-27" has some connotations. The 5-year and 7-year ARMs have the advantage of

being longer term while still meeting some of our balance sheet issues. So you might want to give some thought to the politics of the choice between 3-year and 5- or 7-year. But it would seem with the 5- or 7-year, we could lean against the wind and actually do more—we could actually try to push the rate low enough so that, if the 30-year mortgage were very high because of what was happening in the Treasuries, it would actually encourage housing purchases in that market without changing the magnitude of what you're doing. So I would like you to have a lot more flexibility to do that and possibly to push those rates down more aggressively than we've been willing to do with the 15- and 30-year rates.

CHAIRMAN BERNANKE. Thanks. Let's stay in question mode for a while, and then we'll have an opportunity for free discussion. President Lacker.

MR. LACKER. I have a couple of things I want to ask about. First, let me compliment the staff on providing us with a special abundance of interesting analytical reading over the weekend. Obviously a lot of work and thought went into it. Let me first check something and then ask a question. In the projections of the balance sheet, there are two scenarios, but your projections for the use of credit facilities and liquidity facilities are the same in both. Am I correct about that?

MR. CARPENTER. Yes. The difference between the two is not very big, partly because the liquidity and credit facilities are starting to wind down fairly quickly now over the next year or so. So we didn't see that much reason to make significantly different assumptions about them.

MR. LACKER. So you made the same assumptions?

MR. CARPENTER. That's right.

MR. LACKER. I was thinking about it a different way, and I wanted to get your thoughts on this. The basic scheme here is, you write down our asset purchases, and then

program by program you have a sense of what you are going to project for usage, and then you add those up, and then you subtract currency, and you get reserves, right? In the old days we did it the other way, right? We used to think that if we drained reserves, for example, that would force banks to the window to borrow. So we used to think that you would take our assets, subtract currency, and there would be a certain demand for reserves, and the residual would be met by borrowing. So you guys have turned it around.

MR. CARPENTER. I would slightly prefer to think of it as that you guys have turned it around. [Laughter]

MR. LACKER. This is the economics of the market. I mean, we're just changing policy here, right? Let me explain why I'm thinking about it. We monitor pretty closely the institution that leads your league table for holdings, and we monitor the liquidity management function particularly closely. They have \$150 billion in balances with us. They also hold a sizable portfolio—\$70 or \$80 billion—in general collateral Treasuries and agency MBS. They view those two as really close substitutes as liquid assets. By the way, I was a little puzzled that in one of the papers that talked about banks and lending, liquid assets never made an appearance and was sort of the residual, I guess.

The institution is undergoing a review now. They're rethinking. What we hear is that they're thinking of reducing their Fed balance now and increasing their holdings of agency MBS and Treasuries in order to get a higher yield. That suggests a demand for reserves that's determined by the relative yields of things. Another observation I had is that over the last couple of months, we've ramped up asset purchases, liquidity programs have come in below expectations, and reserve holdings seem to have been sort of flat, all of which is kind of striking and also has the flavor of this other direction that I talked about. Do you see what I'm saying?

MR. CARPENTER. I do. The logic underlying it, such as it was, was that the use of the facilities by depository institutions is by and large determined by economic and financial market conditions; that is, while financial markets are under strain, depository institutions will continue to borrow and other institutions will continue to borrow, and when things get better, they'll borrow less. We've thought of that aspect of it as being roughly independent, and, for most cases, that seems to be borne out by the anecdotal information we get from markets.

The particular institution you're talking about, I agree, is quite different from a lot of the other institutions. That bank has a very large amount of reserve balances that it owns outright in some sense. In addition, it's also borrowing a reasonably large amount from the Federal Reserve. To me, that says that it's choosing, as I think you characterized it accurately, its level of reserve balances as a specific target—this is how much it wants to hold, and it has some latitude to go up or down.

Our reading on the rest of the banking system—the banking system in the aggregate—is not quite that way. The bulk of the activity in lending facilities involves not depository institutions but other institutions. Their borrowing through the commercial paper funding facility, for example, shows up as a quantity of reserve balances, but it's not a depository institution that has done that borrowing. If we wanted to get that set of reserve balances out of the banking system, there's not a bank that would intentionally repay that borrowing to reduce their reserve holdings—it's the CP issuer that's doing it. So, in that sense, we've separated most of the borrowing as a response to financial market conditions and economic conditions in constructing the reserve balances.

MR. LACKER. In some of these programs, like the CPFF, counterparties are outside the banking system, but in the TAF, the primary credit facility, and to some extent the foreign

currency swap lines, those are all inside now. Wouldn't you think that how much a bank wants to borrow is determined in part by how much reserves they want to hold? Now, to some extent, it's an unfair question. We all recognize that in reality it's a simultaneous thing—given the yields they see, they decide how much reserves to hold, and given their funding opportunities, they decide where to get the funds. But it seems plausible to me that they choose reserves, we buy assets, and that results in inflow of reserves to them; they don't need to borrow them from anybody, they've got somebody else funding them essentially, and so they run off the borrowings.

The reason I ask is that in the analytics you have shown us about that, you haven't shown us anything about this link through reserves. When we've had this big discussion for several months now about the effect of these large-scale asset purchases, it has all been sort of microeconomic, financial market by financial market. If this picture I'm drawing is right, then I wonder if there's a channel that's missing from your analysis. For example, for Bank of America to hold more reserves, that means they'd have to want to hold less Treasuries and MBS, which means the yields on those would have to go down. So we could be buying peanuts and Crackerjacks, and it would drive yields down. Do you see what I am saying?

MR. MADIGAN. President Lacker, I think we subscribe to pretty much all of the points you've made, but our ability to quantify the elasticities that you're talking about, I think, is essentially nil. This is a good area for research and further thought, but this is what we could do in the limited time we had available.

MR. LACKER. I understand. Well, the reason I ask about this is that the focus is all supposed to be about exit strategy. We've come through SCAP, and financial market conditions seem to be on the mend. Admittedly there's a lot of downside risk and a lot of uncertainty—is

the economy going to find its footing?—but it's also conceivable that something like the Greenbook forecast comes about later this year and we get positive growth. And it's conceivable that banks' ability to raise equity improves—this was left out of your analysis; you took equity as sort of an exogenous parameter. But if banks find that, because of an increase in economic growth, there are some borrowers that they are interested in lending to, they could ramp up lending and expand equity. If we continue to buy assets and their need for funding collapses, so that the borrowing through our facilities collapses, we could get to the point where they're holding all the reserves they want. Then there's sort of a discrete change, where we're pushing reserves up in a way that can't be absorbed by changes in their borrowing. So the concern I have is the possibility that our programs could get very stimulative very quickly. That's why I'm thinking about what the effect would be if they weren't borrowing anything but we kept pumping reserves out there by buying assets. Do you see what I am saying? Is that a possibility?

VICE CHAIRMAN DUDLEY. Don't we have the ability to affect the rate at which people can borrow through the interest on excess reserves? If that really became a problem, we would be able to affect that.

CHAIRMAN BERNANKE. If that happened, the low short-term rates would be transmitted to longer-term rates, and you would see a decline in rates across the board, which would, of course, be stimulative. But presumably the economy doesn't respond immediately, and we'd be able to offset that by interest rate policy.

MR. LACKER. Would we want to add reserves at \$100 billion a month or so and raise the interest rate on reserves at the same time?

CHAIRMAN BERNANKE. No. I assume that if we came to an exit point and started raising rates, we would no longer be buying assets.

VICE CHAIRMAN DUDLEY. All of the asset purchase programs are “up to.” They do depend on the conditions at the time.

MR. LACKER. Well, I just worry. Banking is sort of sitting there with a certain amount of borrowers. I’m worried about a flip back to the classic model in which we pump in reserves and they lend it, and it’s stimulative.

VICE CHAIRMAN DUDLEY. The other problem is that they’re still balance sheet constrained in terms of the amount of capital they have relative to their assets. You can see that in a wide variety of areas; for example, the spread of jumbo mortgages relative to conforming mortgages is still very elevated.

MR. LACKER. But presumably their ability to access equity markets is going to improve.

CHAIRMAN BERNANKE. We hope we’re successful in this regard. President Hoenig has a two-hander.

MR. HOENIG. Thank you, and this is a question for you, just to clarify. I understand where Jeff is coming from, but when I read these papers and I listen to these presentations, I think we have more than an exit strategy discussion going on here. Eric has kind of drifted onto one discussion about managing rates. Another is around managing the portfolio—how we adjust. Then there is the exit strategy, which has two dimensions, but I think we are only discussing one. The first dimension is the traditional monetary one of how you get the fed funds rate up. The second is around large-scale asset purchases, which we’re not really talking about today, since we still have this line showing our holdings going up and the only thing is how we are going to adjust the line going up, but that is not an exit strategy. That is about how we are going to manage going up that line; that is the concern, I think.

So I wonder if it would help to split these up when we are talking. I mean part of this is about managing the rate, which is different than exit strategy, and it would help clarify when we get into the discussion part of the meeting to say which one we are going to focus on first. Right now I think we are focusing on all three intermittently here and back and forth, and I think that will cause maybe more confusion.

CHAIRMAN BERNANKE. President Lacker, were you finished?

MR. LACKER. I had two smaller things to ask about. One had to do with MBS spreads. This past intermeeting period is one of those episodes where convexity-related hedging, that is, selling in the Treasury market, was a widespread feature of commentary, and it has happened many times before in the last decade or so. The picture you get, and let me check this, is that there are a lot of holders of mortgage-backed securities who hold a lot of Treasuries. So they're active in the Treasury market and they're active in the MBS market. Is that a good picture, a fair picture?

MS. MOSSER. They may have Treasury securities that they could sell. They also have the ability to short them. They can also do similar portfolio adjustments in the swaps market, which, through follow-on effects, through other trading mechanisms, will affect Treasury yields. So they can pay fixed on swaps.

MR. LACKER. So this is broadly speaking a set of financial market participants very active in MBS markets and very active in Treasuries as well. They would seem to have the ability to look at the spread and make decisions at the margin about buying and selling Treasuries or MBS based on their view of the proper level of the spread or where the spread is headed, right?

MS. MOSSER. Well, the convexity hedging phenomenon, particularly in the current episode, was actually more concentrated in servicers and not so much in MBS investors themselves, although I'm sure there were a few of those that were selling convexity. Servicing portfolios have even more convexity than mortgages, so, dollar for dollar, it doesn't take a big change in their duration to cause someone who is hedging to sell either a lot of swaps or a lot of Treasuries. One reason for the speed is that there are many servicers, they have really, really similar portfolios, and they all go in on the same day or two and conduct the same sorts of trades in the same direction.

MR. LACKER. I'm less interested in convexity-related trading per se than the linkages between the MBS and the Treasury markets. There are a lot of players taking a position on the spread, and I'm wondering what we know that they don't know about where the spread should be. So, analytically, on what basis would we make a judgment that the spread is too low or too high?

MS. MOSSER. Two things. We used history.

MR. LACKER. This is history they can see, right?

MS. MOSSER. But we used the long history of spreads to Treasuries to make a judgment about how narrow they were. We also considered whether there was anyone else who was buying for investment purposes, in other words, anyone else who was willing to come in and actually purchase them to hold besides us. If we were the only long-term purchaser, we took that as a signal that we had lowered spreads to the point that they were not attractive to other investors. That was the place that we were before the convexity hedging episode, and it's one of the reasons that we were already beginning to slow down.

MR. LACKER. A related question: One of the memos was pretty eloquent about the need for greater clarity and better communication about our strategy. Is there any chance that providing the Desk with more flexibility about the composition of our asset purchases could diminish rather than enhance market understanding of our strategy?

MS. MOSSER. I believe that flexibility could be a very successful strategy, but it would need substantially more clarity about the Committee's views and literally its reaction function, for lack of a better term, which may be very difficult to do, given how far out we are in uncharted territory.

MR. LACKER. One final question about the interest rate on reserves and the reserve management tools: Does the staff think it's at all likely that the effective funds rate would not be brought up pretty much in tandem if we raised the interest rate on reserves under current arrangements?

MR. CLOUSE. I think there's an excellent chance that it would rise. We just don't know whether it would go up by an 80 percent factor or a 90 percent factor—that remains to be seen. So I think it's very prudent to examine all of these other tools. We just really are in uncharted territory, especially with hundreds of billions of dollars in reserve balances outstanding.

MR. LACKER. Have you thought about whether we care about the federal funds rate *per se*, that is, if the interest rate on reserves is more relevant than the weighted average you calculate every day?

MR. HILTON. I think it's a good question. What does the rate represent? What does the gap represent? Does it represent a rent that banks are extracting, or does it represent their

own spread aligned with their borrowing rates and their lending rates? I think that's a legitimate question, and in my mind it's an open one.

MR. MADIGAN. The experience last fall, though, gives you some reason to think that the fed funds rate is relevant. The fact that the substantial spread between the interest rate on excess reserves and the fed funds rate seems to be reflected in other market interest rates like LIBOR, CP, and so on, suggests that it's not solely the IOER rate that's the relevant margin.

MR. LACKER. Thank you.

CHAIRMAN BERNANKE. Governor Kohn.

MR. KOHN. Thank you, Mr. Chairman. I have a couple of questions. On this strategy for dealing with the large-scale asset purchases, what are other central banks doing? I notice the Bank of Japan is doing just a certain amount per month. And the Bank of England just did what we did—they announced a total. But are they varying within that total? Are they exercising flexibility or is the process pretty mechanical? Are there any lessons for us from what they're doing?

MS. MOSSER. It's our understanding that it's fairly mechanical. Now, a couple of times the Bank of England has bought so much that they were afraid that they were reducing liquidity in the market, and they have slowed down again from a market functioning standpoint.

MR. KOHN. Sort of like what we have done with the MBS.

MR. MOSSER. Yes. But they absolutely are much more focused on a reserves or a money target than the SOMA purchases have been.

MR. SHEETS. The Bank of England has moved at a pretty regular pace of about £25 billion a month. One place where I think they do have a little bit of flexibility that they have chosen not to utilize is in the composition of the purchases; they have the gilts approved, but they

could also buy corporates and commercial paper, yet the vast majority of their purchases have been in the gilts.

MR. KOHN. Other central banks have found it difficult, as have we, to specify the reaction function, I suspect.

Brian, you mentioned that Treasury supply is driving up Treasury rates, but my impression is there has been no news on Treasury supply. It's a very common thing to hear, but I wondered.

MR. SACK. I agree. I think for this intermeeting period, most estimates of borrowing needs of the Treasury didn't rise. So I would say that's more of a "backdrop" condition, not the main driver of the rising yields over this intermeeting period. But it's certainly a very important factor over a broader time period.

MR. KOHN. And finally for Seth, are there any consequences of not covering our expenses? Can we pay dividends? Do we continue to pay salaries? [Laughter] For the Governors we can do that out of spare change—the vending machine receipts will pay the Governors' salaries—but what about for the rest of you?

MR. SACK. If you're going to go down that road, you should make the salaries responsive to the upside as well. [Laughter]

MR. CARPENTER. That sounds like a profit-sharing plan for the Fed employees. The accounting treatment is that once there's no net income after paying dividends and that sort of thing, we stop remitting money to the Treasury. What happens if we can't even make the dividend payments to the member banks? The Reserve Banks would not pay their dividends to the member banks, but they would have to make that up in subsequent years.

MR. KOHN. It's cumulative.

MR. CARPENTER. It's cumulative, exactly.

MR. KOHN. Are they forced not to pay dividends, or is that a choice?

MR. CARPENTER. My recollection is that it's a choice, and part of it comes from Board direction to the Reserve Banks. Then the question becomes how long this goes on; it ends up accumulating through time, and then in subsequent years it just takes that much longer before we start getting back to normal. We have to save up earnings. The accounting for it is still being evaluated. There's some view that some of the remittances that have already been paid to the Treasury could be recouped by booking an asset that's essentially a prepayment, and then that might be able to be pushed back an extra year; the accountants in the System are working on the actual treatment of that.

MR. KOHN. If we get into this situation, there's nothing mechanical about it that would impinge on our independence? We could continue to meet our responsibilities? President Bullard and I were at a conference where a lot of academics were worried, I think, that if we didn't meet our expenses, something awful would happen. Something awful may happen, but--

MR. BULLARD. Just to follow up on that, are there examples of foreign central banks that have been in a position like this?

MR. SHEETS. There have been a number, I think, that have had to turn to their treasuries to be recapitalized. I don't have a lot of details about those experiences at my fingertips, but it's something that has happened before, and there are some precedents we could look into.

MR. BULLARD. My sense of this, then, is that you are at the mercy of the Treasury. If they're merciful, then they recapitalize you.

MR. KOHN. Well, no. What I was getting at was that I didn't think you were at the mercy of the Treasury, but rather that it was our choice.

MR. BULLARD. That's not the foreign experience.

CHAIRMAN BERNANKE. Well, the dividends are one buffer. Beyond the dividends, presumably, and the capital, then you would be at the mercy, I would imagine.

MR. MADIGAN. I don't think that's clear. I mean, there's nothing that says necessarily that a central bank can't operate with negative capital.

MR. SHEETS. And I would bet that we could also find some examples of foreign central banks that did have negative capital. You know, it can be a little uncomfortable. For the cases that I can think of, they have eventually gone to their treasuries to seek recapitalization, but I think there's a range of experiences out there with this that we can look at.

MR. PLOSSER. There's nothing that says they can't operate, but do you think the political environment is such that something dramatic might happen in response to that, given what has gone on in this episode? I would think that would be the bigger risk, not the accounting treatment. It's the political force.

CHAIRMAN BERNANKE. This is not going to happen in the intermeeting period.
Vice Chairman.

VICE CHAIRMAN DUDLEY. I hope not. The issue from my perspective is that it's political. In other words, the day that you find out that you're no longer remitting positive balances to the Treasury, there's a nice, juicy news story, and then they go evaluate: Why did this come about? Because the Fed engaged in these large-scale asset programs and because of asset-liability mismatch. Was that prudent for the Federal Reserve to do?

MR. CARPENTER. Just to clarify a bit, what we sidestepped in the analysis was the fact that the remittances are actually made currently by individual Reserve Banks, and it is very, very common for an individual Reserve Bank not to have sufficient capital to equate with surplus and to make a remittance to the Treasury. Over the past decade or so, it's been something like 40 weeks per year that at least one Reserve Bank hasn't made a remittance to the Treasury. So it's not as though this is something that is completely unprecedented for the Federal Reserve. What would be very different here is that it would happen for the Federal Reserve System as a whole.

CHAIRMAN BERNANKE. President Evans, do you have a two-hander on this?

MR. EVANS. Well, I had a question that was related to Governor Kohn's question on this. Do we have a particular attitude towards mark-to-market losses, that is, capital losses, versus having our net income go to zero? That was one of the more striking graphs, a very extreme example. I would have thought that there would be an accounting entry that would allow us to continue to fund whatever we needed to do, but the political issue seems to be an important one. It would be well known along the way, so that people would see it coming, but some of these tools would involve capital losses right away. Would that raise a similar red flag in terms of our balance sheet? Would we be worried about that?

CHAIRMAN BERNANKE. I think it's a consideration. First of all, you wouldn't want to be selling huge amounts. Second, you probably could mix different assets of different vintages and do things of that sort. But I think it is a consideration that we should pay attention to.

MR. EVANS. My question was really: Do any of the reserve management tools have better attributes than others?

CHAIRMAN BERNANKE. Most of them—like reverse repurchases, things that don't involve actually selling the assets, but rather involve financing them in different ways—don't have the capital loss component.

MR. EVANS. We will lose money on them, though, right? Because presumably the interest rate we have to pay on the repo is going to be higher than the income that it's earning.

CHAIRMAN BERNANKE. Well, that's the point. If it gets to 8 percent, then we're in a loss position.

MR. EVANS. Yes, right, right.

CHAIRMAN BERNANKE. Governor Kohn, were you finished?

MR. KOHN. I'm finished.

CHAIRMAN BERNANKE. Okay. President Stern.

MR. STERN. Thank you. I've got a couple of questions. The first one is on the exit strategy, and the second one is a little more tangential. With regard to the expiration dates for these liquidity facilities, if we extend them to February 1, 2010, what kind of commitment and communication are you thinking about so that they actually do end then?

CHAIRMAN BERNANKE. Maybe I could intervene. There would be a press release Thursday, which we've been working on, and we can show you a draft. Here are the proposed final sentences of the introduction: "The Board and the FOMC will continue to monitor closely the condition of financial markets and the need for and effectiveness of the Federal Reserve's special liquidity facilities and arrangements. Should the recent improvements in market conditions continue, the Board and the FOMC currently anticipate that a number of these facilities may not need to be extended beyond February 1. However, if financial stresses do not moderate as expected, the Board and the FOMC are prepared to extend the terms of some or all

of the facilities as needed to promote financial stability and economic growth. The public will receive timely notice of planned extensions, discontinuations, or modifications of Federal Reserve programs.” That’s the kind of language that we were trying to communicate—not too definitive, but clearly raising the possibility there won’t be any further renewals.

MR. STERN. Okay. The second question is about the TALF and the quantities. I gather we now think TALF volumes might go to \$175 billion whereas heretofore we were up around \$500 billion, and I think earlier we even had a larger number. Is all of that consistent with the objectives of this program? Where is this coming from?

MR. NELSON. I think partly it’s experience as we work with the program. It’s an awareness that as ABS markets improve, we’re not going to need as much TALF activity to support them. It’s becoming consistent with what we’re seeing in CMBS markets. Right now the numbers we’re putting down for TALF 2.0 peak at \$50 billion, which is about what we think is going to be needed for CMBS, and with TALF 1.0 it’s—I forget the numbers that we actually put down—but it’s a more modest \$125 billion, which is where we see activity at its current pace ending in the first quarter. So it’s consistent with the policy objectives. It’s just accumulated experience.

CHAIRMAN BERNANKE. President Hoenig.

MR. HOENIG. Just quickly, I want to go back to Governor Kohn’s original question on the accounting. In this document there is a discussion about investments held in consolidated variable-interest entities, with a conservative assumption that we could take a \$5 billion hit and then no more losses after that, even if interest rates went up pretty significantly. Is that a conservative assumption? That is, if interest rates went up significantly, wouldn’t you expect more losses out of that?

MR. CARPENTER. It has been the stated policy that it's expected that these assets will be managed through time to recover everything, so in that sense the official view is that there will be no losses. Given that, the estimate is conservative—it's taking on more losses than was originally expected by the policy itself.

The other part that's not obvious to me is the effect if, for example, interest rates rose. If that increasing rate was because the economy as a whole was getting better and financial markets were healing and everyone thought the outlook was very, very rosy, then the underlying value of some of those assets may no longer be distressed. Some of the write-downs are because of the strains in financial markets. You could imagine cases where some of those assets increase in value because the economy is turning around and the outlook is brighter, and it's exactly those sorts of multivalent influences that caused us to throw up our hands somewhat and take the coward's way out.

MR. HOENIG. Went to neutral. Okay. The second question is also related to the earlier discussion. In some of the accounting that I've seen and what I believe I saw discussed in here was the establishment of a prepaid account to the Treasury to go back and, therefore, bring your surplus up so you could continue to pay your dividends and so forth. Are those only allowed under special circumstances, or would those be allowed in any kind of a loss circumstance, so they would enable us to continue to pay dividends?

MR. CARPENTER. Right now what's envisioned is the case where losses were sufficiently large that capital would go negative. What has been written into Reserve Bank accounting policy is the ability to create a prepaid asset for things that have happened year to date. They are currently working on ways of going back not just year to date, but the prior year

as well, so that would be used in the event of losses where you wouldn't have enough retained earnings to equate surplus with capital paid in.

MR. HOENIG. That would address part of Governor Kohn's concerns about continuing to pay for operating expenses and continuing to pay dividends.

CHAIRMAN BERNANKE. President Plosser.

MR. PLOSSER. Thank you, Mr. Chairman. I have a few questions. Some of them have been touched on already, but let me just see if I can get some clarifications. One question is for Brian, and it's related to your conversation with Eric about SOMA lending of agency debt and the liquidity in the market. You said that one of your reactions so far has been that you have kind of slowed down the purchases. In fact, if you're worried about the liquidity of that market and we're soaking up all of the liquidity, what's wrong with another option, namely, to stop buying? Why create a program where we're buying them and lending them back out again? Why not just not buy them in the first place and let the liquidity of the market deepen as we move forward? Is there something wrong with that strategy?

MR. SACK. Well, I think it's quite possible that we will exercise the "up to" part of the mandate regardless of whether we're lending the agency securities or not. I think the desire to lend the agency securities is in response to concerns about market function, which would be there whether the program ended at \$100 billion or \$150 billion or \$200 billion. In either case, SOMA holdings are going to be a sizable portion of the benchmark GSE market, and, as I said, we're already hearing reports from the market about concerns about shorting and not enough floating supply of these issues.

MR. PLOSSER. That's because we are buying them, right?

MR. SACK. That's because we are buying them, right. It's a matter of degree. So I agree. If you don't get to \$200 billion, you lessen the problem, but I think we would pursue the authority to lend our agency holdings regardless of whether we thought the program was going to end before \$200 billion or get all the way to \$200 billion. We're already seeing these strains. We think making these holdings available to the market makes sense in terms of supporting market functioning, treating these assets the way we treat other SOMA holdings, and, as I said, posing little risk to the Federal Reserve.

CHAIRMAN BERNANKE. This is about making sure that you can deliver a specific issue. It doesn't affect reserves or the stance of monetary policy, I don't think.

MR. PLOSSER. No, I was thinking purely in terms of the liquidity of the market, which I thought you were concerned about. If we are heavily into buying in these markets and taking those assets out of the market, and there are some liquidity problems for some of these issues, then all we're doing is turning around and lending them back out again to help liquidity. It seems like we're giving with one hand and taking away with the other. I'm just trying to understand a little bit about it.

VICE CHAIRMAN DUDLEY. You might not know ex ante which things are going to have liquidity issues in the future.

MR. PLOSSER. I'm not necessarily opposed to the program.

VICE CHAIRMAN DUDLEY. Having a lending program allows you to accommodate those shortages that might occur ex post.

MR. PLOSSER. Another question. On the winding down of some of the liquidity procedures, there are some specific recommendations that are made about the TAF auctions and some others about mixtures of extending the dates, cutting back auction sizes, and/or changing

prices in some form. I'm curious about how the staff thinks about the right mixture of controlling prices versus quantities, the tradeoffs. I mean, October is still what, five months away. In thinking about when is the right time if we thought we wanted to extend, how much in advance do we need to do that? Is there an option of continuing to sort of just proceed with gradually ramping up prices or costs of these programs to encourage the users to wean themselves off of this and go back to the market? Then we would not make the decision to extend maybe for—I don't know—a little longer or wait a little while to see whether or not we can wean these players off and into the market. So thinking about the mix of both price and quantity controls, I guess I was looking for some insight as to how do you pick between those two and the tradeoff versus extensions or not.

MR. MADIGAN. I think it is, unfortunately, a fairly complicated situation, so it's difficult to give a simple answer to your question. For one thing, we have both standing facilities and auction facilities, and they're really very different in terms of their philosophy and what you might think their purpose is and how to unwind them. An auction facility, pretty much by construction, can be unwound primarily just by reducing the amounts offered, whereas to make a standing facility less attractive, obviously you'd increase the interest rates or otherwise make the terms less attractive. To some degree what we've proposed here has included elements of both of those—for instance, making the terms less attractive in the case of the AMLF by requiring the redemption threshold, and reducing the auction amounts in the case of the TAF. They're just two very different facilities that require different approaches. As we noted in the memo, it's not really feasible to scale back the AMLF by raising the interest rate on that particular program.

On the timing, that's a difficult question. I think one consideration is that, as we get closer to the termination dates of programs, market participants will be deciding whether or not

to lend to particular counterparties, depending on whether that counterparty is going to have the option of turning to the Federal Reserve to repay the investor or the lender. That argues at least for a significant lead time in notifying the market as to when these facilities are likely to go away.

MR. PLOSSER. What I was thinking about was the pace. Take the TAF, for example—the recommendation is to cut from \$150 billion to \$125 billion, and maybe or maybe not to raise the minimum bid rate. Why don't we cut to \$100 billion immediately? It's undersubscribed by a substantial amount. Why not move the minimum bid to something closer to the interest rate on excess reserves rather than making it so far below it that we're subsidizing, at least in the current environment. We're sort of mixing those two things up, trying to figure out what the right balance and strategy are, or how aggressive one wants to be in this process.

MR. MADIGAN. Right. It is very much a matter of judgment, I think, including how aggressive you think is appropriate at this point, given circumstances that arguably remain very fragile, with the banking system still under a lot of strain.

MR. PLOSSER. Well, I worry particularly about the TAF—it's so dominated by a couple of banks, and I don't want to confuse supporting a couple of banks with the broader purpose of sort of what these bank programs might be doing.

I wanted to make a couple of other points—and Jeff made both of these in a different form. One is the communication issue. If you provide more flexibility to the Desk to do some of this stuff, communication is going to be really, really, really difficult, and we may be accused of being less transparent rather than more transparent about that. So I think that's going to be a very tough task.

MS. MOSSER. Absolutely.

MR. PLOSSER. The other point is on the interest on excess reserves. It's certainly true that there's a possibility that as the markets and the economy begin to recover, we'll have a lot of excess reserves sitting out there. And the opportunity cost to banks may be, "Okay, when can I make a good business loan at 8 percent or 7 percent?" And they view the risk tradeoffs for that as the right ones. We may be faced with a situation, even if we thought interest on excess reserves worked perfectly, where we would have to raise the IOER very aggressively to choke off that massive amount of liquidity that may be just sort of running out into the marketplace. If interest on excess reserves isn't working as we'd like to see it work, then we are going to have to combine that with some other mechanism for draining those excess reserves. The question is: What's the relevant interest rate that's going to guide us in some of those moves? And I think that's very difficult to sort out, even with the tremendous job the staff has done—there's a lot of forest and a lot of weeds here in trying to sort through the details. But I do think it's important that we try to make sure that if Plan A doesn't work, we have a Plan B. That is, we need to make sure that if IOER doesn't work as we hoped it would, we have other mechanisms to drain the reserves. But we may have to do that at a very rapid pace, which may mean some of these mechanisms that you suggest may operate more quickly and are more easily implemented than others, and that might be a consideration that we have to think about.

CHAIRMAN BERNANKE. President Plosser, I think there are two mechanisms that prevent this thing that you're worried about from happening overnight.

MR. PLOSSER. I don't think overnight, but it may be a period of months.

CHAIRMAN BERNANKE. The first one is that, assuming that we have the power to raise interest rates, which is what this whole discussion is about, then rates on longer-term securities will reflect the expected path of future policy rates and, therefore, will not go to zero.

So to the extent that there's an expectation over the next three years the Fed will be raising rates at a reasonable pace, that will limit the amount that the supply price of credit can fall. That's the first point. And then, the second point is, of course, that, although financial markets move quickly, all of our models tell us that the economy itself moves somewhat more slowly. With a large output gap, it's going to take some time certainly for the economy to reach its full potential. And I understand all of the issues with the output gap, and so on, but I don't want to leave the impression that this is something that's going to require a turnaround within a matter of weeks. I just don't think that's a real concern. President Evans.

MR. EVANS. Thank you, Mr. Chairman. First, I'd like to compliment everyone on the new audio system, although it picks up the Blackberry noise pretty well, too. On the reserve management tools, I've read your speeches and heard you describe them with quite a lot of energy. We're looking at quite a number of tools, and yet I wonder how different they are in terms of their ability to achieve what we want. What I have in mind is that the interest on reserves tool by itself—especially with the elements that are designed to help the GSEs somehow earn interest on their reserves—seems powerful enough, so that that should work. But what if, for some reason, it doesn't work? Maybe somebody could describe the elements of the other markets that we're expecting to take advantage of that somehow would provide an independent channel that would help out. For example, would the reverse repo market really work very well in an environment where the banks seem not to be arbitraging the interest on reserves?

MR. HILTON. If we are seeing a gap between the rate that banks are earning on excess reserves and what they are paying, I think that I would approach that situation as really an arbitrage opportunity for us. If we're talking about reverse repos as the tool, as long as we have the collateral and we can basically get to those depositors directly or even indirectly, then that

would be the mechanism that we would use to grow the reverse repo market. But in contemplating the potential scale for the operations, I don't think we should believe that we are necessarily limited by measures we currently have of the size of that market. Rather, it's a matter of how many reserves we want to drain and who it is that is earning a rate from the banks that's well below the interest on excess reserves and therefore would be interested in lending to us at a slightly higher rate. So that's how we would simultaneously lift rates and manage down the size of the banks' balance sheets, that is, bring down excess reserves and some of their liabilities.

MR. EVANS. As I was thinking about this, it seemed that one attractive feature is that the money market mutual funds would be potential customers here.

MR. HILTON. We have thought of them. We haven't approached them about it. But in terms of thinking of a pool of liquidity, that might fit the kind of description I provided, yes.

MR. EVANS. Okay. So there's no obvious reason to think that, when the banks are not taking up these arbitrage opportunities, there's some underlying feature that also would make the money market mutual funds somehow reluctant?

MR. HILTON. I don't believe so.

MR. EVANS. Well, they're not designed to. I'm just trying to think in terms of the risks that we might face.

MR. CARPENTER. One extra bit of data that might help with that specific question is that, even in the past couple of days, and in the past months, when the effective federal funds rate has been right at the top of the zero to 25 basis point band—or we would just say right up against the rate on excess—it has been associated with the repo rate being above the excess rate, that is, at 27, 28, 29 basis points. And we've been hearing that that has been causing some of this

shifting of funds that might have been lent unsecured into the secured funding markets. So I think that is very much in line with Spence's point about the repo market being a way for us to take care of some of that.

CHAIRMAN BERNANKE. Okay. President Bullard.

MR. BULLARD. Thank you, Mr. Chairman. I just wanted to see if I have this right about exit strategies. And I have to say Brian Madigan's memo here on liquidity facilities is a masterpiece of clarity, so thank you for that, Brian.

It's super clear what we're going to do and what we're thinking about with each program, why we're thinking about it, why we're thinking of the different options. And when I look at large-scale asset purchases, it's much less about exiting, and maybe it's a little bit about coping. But I expected to see more about what we could do if we wanted to reduce our holdings, and all I see is that we're going to have to sell. So my question for Trish is this: Is the bottom line that the plan is basically buy and hold? In other words, when we're buying now, we're basically committing to a very large balance sheet for a very long period of time, and then the other stuff is all a question mark about what that means in terms of macroeconomics, that is, whether it's worrisome or dangerous or not. But as far as the balance sheet itself, it's ramping up, and we don't see good ways to mitigate that.

MS. MOSSER. I have two responses—at least two. The first is that certainly “buy and hold” has been the staff's maintained hypothesis when we do Seth's pictures of the size of the balance sheet. And if we're going to be reducing excess reserves in the future, while we could do it through selling, probably our first step—and I think this would be the staff's bias—would be to use the reverse repo market in order to manage to a higher federal funds rate. So that's my first response—as a baseline, probably yes.

However, there are a couple of caveats to that. It does very much depend on how the Committee wants to react to whatever the macro and financial conditions are at the time we are exiting. One can imagine a scenario, the really high-inflation scenario that Seth played out, where the Committee might very much want to tighten financial conditions in the broad economy very quickly. Selling a really large quantity of assets very quickly would probably achieve that for you, no matter how we manage the short-term interest rate.

So I think it's very dependent on the Committee's views at the time that exit comes around. It's possible to do, but the question is: Will that be what the Committee wants to do, both with the size of the balance sheet and in terms of influencing financial conditions?

MR. BULLARD. If you get into a high-inflation environment, it's too late. We've already failed at that point. I can believe at that point you might want to take more radical action, but the idea is to get this optimal path.

MS. MOSSER. We have been purchasing these securities on the upside very quickly, with the intent of influencing private credit rates. On the exit side, at the point we would decide to sell, we have been going with the assumption that we would exit much more slowly in the optimal case. We would sell very slowly and in small quantities—this is not built into Seth's baseline, but we could do this—in the way that we have been purchasing Treasury securities for decades, which is to buy regularly, in tiny amounts, being as market-neutral as humanly possible. That can be achieved, but that's a slow unwinding. It's faster than what's built into Seth's pictures, but it's quite small. A big year would be \$50 billion or \$70 billion on the purchase side, on the upside, in the old days. So we would assume that size on the downside. So it's not a rapid way to bring down the balance sheet.

MR. BULLARD. Earlier this spring we were thinking of having Fed bills or a Treasury program that would mitigate this problem. But those are now politically off the table. Is it correct to think that now that they're off the table we have basically committed to a large balance sheet? That's the way I read these memos.

CHAIRMAN BERNANKE. They wouldn't affect the size of the balance sheet. They're just alternative ways of financing, which is what we are talking about.

MS. MOSSER. Fed bills, or doing reverse repos for that matter, wouldn't shrink the balance sheet, they would simply shrink reserves; that is, they would affect the liability side of our balance sheet, but not the asset side—the assets would still be just as big.

MR. PLOSSER. Mr. Chairman?

CHAIRMAN BERNANKE. President Plosser.

MR. PLOSSER. I have a very brief intervention, because it's related exactly to this point. Brian, a little earlier when I asked you the question about agency debt, you said that you presumed we were going to go to the limit on that. Is it the expectation of the Desk and the markets that the operative words of "up to" certain amounts in our policy statements are basically irrelevant, and that, in fact, we're viewed as committed to going to those amounts and we wouldn't consider doing less?

MR. SACK. Actually, what I said before was that the Desk may exercise the "up to" part of the directive. And what I meant by that is that we may not get to the entire \$200 billion on account of these concerns. Now, the question is: What does the market expect? We actually changed our procedures for accepting tenders on agency debt in a way that we think is going to taper off the pace and perhaps leave us short. I would say this hasn't garnered a ton of market attention. There may be a period during which they have to learn and adjust to that, or it may

just not be that big of a deal. So I think the markets understand we have some flexibility. They haven't reached a definitive conclusion that the SOMA holdings may fall well short of \$200 billion. But presumably over the next several months there will be increasing inference in that direction, if things evolve the way we expect.

MR. PLOSSER. Do you think the same is true for the MBS and Treasuries?

MR. SACK. I think the purchases of the Treasuries have been regular and steady and nonresponsive to market conditions, and that's very well understood at this point in the markets. For MBS, I think what happened is that, over this intermeeting period, the markets learned that the Desk was less responsive than they anticipated. The current MBS secondary rates reflect that understanding. It's just that the adjustment of how they got there was perhaps lumpier because of that learning. I think the secondary MBS rates stayed lower for longer, because there was this assumption about more Desk responsiveness, and they then had to adjust up more abruptly. But on net, it's at a point where the markets seem to understand that the Desk is exercising only limited discretion in terms of making those purchases.

MS. MOSSER. One comment: On the primary dealer survey that we do before every meeting, we did ask this question about probabilities of increasing versus decreasing. We didn't really ask the "up to" part, we just asked whether the sizes might be decreased. In all three categories, there was some weight put on decreasing the size of the programs. If I'm recalling the numbers correctly, it was smallest for the Treasury program, but that's partly because it's scheduled to end in September, and it's closer to being done. But there is some weight being put on decreases in size, meaning not getting all the way.

CHAIRMAN BERNANKE. President Lockhart.

MR. LOCKHART. Thank you, Mr. Chairman. To continue the grilling of Brian and Trish, my interpretation in sort of street terms of what you said earlier is that the directive has been a problem for the Desk for last few weeks. And we're in somewhat extraordinary times where you may have been uncomfortable—I'm putting words in your mouth—that you were making policy as opposed to interpreting the wishes of the Committee. Can you be more explicit about what you'd like to see in a directive that would work, and yet at the same time deal with the external communication sensitivities?

MS. MOSSER. Okay. I'll take a stab at that one. I don't know that it is so much that we didn't have a sense of what the Committee wanted, although there were times when perhaps we didn't have perfect clarity, but rather it's that I don't think the public and the markets always understood. For example, there was discussion in the market that the Treasury purchase program was going to be immediately expanded in the middle of May—in an intermeeting period—and extended and enlarged substantially as Treasury rates continued to rise. In fact, this was a shockingly widely held opinion, despite the Chairman's public statements that were close to being to the contrary. So, on the communication issue, everyone understands that these are very unusual programs, but it would be good to clarify what your expectations are in terms of the direction of what the programs are likely or not likely to do. For the Treasury purchase program, in particular, there's a bit less clarity. For the MBS program and the agency program, the markets have now figured out that, up to a point, narrowing spreads was the goal. As for going further than that, the Desk is likely to step back and say, "We're not going to become the 100 percent only investor." But they learned that by watching what we were doing as opposed to getting a communication from the Committee. If your preference is "steady as she goes" through the end of the programs, subject to the caveat that if conditions improve the Committee may use

the “up to” option, then that would help as sort of a basic starting point. Beyond that, it depends on what the Committee’s true views are about the ultimate goals of the programs and whether they should be enlarged or kept the same size.

CHAIRMAN BERNANKE. I can build on that. Could you imagine language like, “...will respond to market conditions, spreads, and the pace of issuance,” or something like that? Would you recommend something like that? Would you propose something like that? If so, you need to think about that. Is that what you had in mind, President Lockhart?

MS. MOSSER. If the Committee is comfortable with the option that I spoke about in my presentation for flexibility within asset classes and agrees with our assessment that, subject to this sort of communication, it would be useful, then that would be the right kind of clarifying statement.

MR. SACK. I would say that, if the Committee is comfortable with the degree of flexibility that the Desk has been exercising, then I would leave it alone, in terms of public communications at least. To the extent that you start to change the directive, it’s going to involve a lot of guessing about what has changed and what’s going to happen now. I think the market has gone through a learning process that may have caused some abrupt movements here and there, but it has gotten to a point where it pretty much understands that the general approach is slow and steady, with some flexibility around that in response to market functioning. And if that’s what the Committee is comfortable with, we’re at a point where we don’t need any kind of public clarification. If the Committee wanted the Desk to be more responsive to market interest rates, then that would require some kind of communication to the market, so that they didn’t have to infer it over time just from our actions.

CHAIRMAN BERNANKE. I think many of us on the Committee would be looking to you to tell us if you think there's a strategy that, for a given amount of purchases, would achieve better results, and, if so, what that is and how you would recommend communicating about it. I think we have to rely on your market knowledge to do that. So if you do believe that's the case, perhaps for the next meeting or before then, you could present us with some alternatives. But if you think where we are now is fine, that's good, too. But let's not fail to take advantage of some improved operating process, if it gives us better results.

MS. MOSSER. Assuming the "up to" sizes stay where they are, I think I agree completely with Brian, particularly regarding the Treasury program, where we simply don't think anything other than "slow and steady" is probably the appropriate implementation strategy given its current size and its current expiration date. We are already, frankly, moving in the direction of more flexibility, as Brian described, on the agency debt program, and we'll continue to move that way, assuming that the spreads don't widen and we don't get dislocations in the opposite direction. If flexibility is going to be useful, it would be in the MBS program, and, obviously, we'd be happy to write down a couple of alternatives for the next meeting. It might help clarify the language.

CHAIRMAN BERNANKE. Thank you. Vice Chairman.

VICE CHAIRMAN DUDLEY. Another alternative may just be to clarify in the Humphrey-Hawkins report, rather than coming up with a whole new vehicle. It could just provide a bit more language about what the intent of the programs is and about our thought processes. From my perspective, the statement and the minutes are not great vehicles for communicating about this.

CHAIRMAN BERNANKE. But if we're departing from what we've been doing, we want the Committee to—

VICE CHAIRMAN DUDLEY. I'm assuming that we're going to stay on the same path. I still think it would be useful to have something in the Humphrey-Hawkins report that explains what this is. And then, if we depart, I agree, I think we'd have a different directive.

CHAIRMAN BERNANKE. President Lacker, did you have a comment?

MR. LACKER. Yes. I think you are right, Mr. Chairman, to ask the Desk for their suggestions as to language that would help them achieve the results we desire. A corollary to that is that they understand the results we desire. My interpretation of what we decided when we embarked on this was to achieve whatever improvement in MBS yields would result from the quantity we sketched out, not to peg yields at a given level, not to dampen fluctuations in yields, not to reduce the dispersion of future yield outcomes, and not to respond in the way the markets seem to expect us to respond. We didn't put that in the directive, obviously, and we didn't put that in the statement either. In preparing for this meeting, I looked at the statements and read them from the perspective of the intermeeting period, and it strikes me that there are things in the statements that markets could have latched onto that led them to misinterpret what results we desired to achieve. I think that's useful to keep in mind.

CHAIRMAN BERNANKE. That's fair enough, but there may even be technical issues, like not wanting to be the only buyer, and things of that sort, that we would want to communicate. Other questions? President Lockhart.

MR. LOCKHART. Mr. Chairman, really a question for you, not for this side of the table. The Treasury proposed that it would have the last call in approving 13(3) authorizations. Have we developed a view on that and communicated that in any way?

CHAIRMAN BERNANKE. As I mentioned, I would like to defer that to lunch tomorrow, but I will present all of these issues and tell you about the report and the other aspects that we'll start undertaking, and then cover it at that time. Other questions? Governor Tarullo.

MR. TARULLO. Thank you, Mr. Chairman. I thought someone might ask this, which is why I didn't get in the queue. Brian, what kind of reaction do you expect from markets and economic commentators to the press release the Chairman is working on? He read us part of the draft on the modifications to the various liquidity facilities. Specifically, do you think there's much of a chance that it will be read as, if not the beginning of tightening, the lifting up of the screwdriver and placing it against the screw? [Laughter] I'd also be interested in what Brian Sack and Trish think about that.

MR. MADIGAN. First of all, it is complicated, and I think it will take a while for people to understand all of the elements, assuming the Board and the FOMC follow the staff recommendation. A second point, though, is that it will be read very much in the context of the announcement tomorrow and what that says about your intentions with respect to the federal funds rate, the asset purchases, and so on. In some sense that will really very much condition the reaction, because, among other things, that will give the economic backdrop, the rationale, for how the Committee is approaching monetary policy at this stage.

MR. SACK. I would add that without the sentences that the Chairman read, it's a somewhat mixed release. At least one program is being scaled down, but others are being extended, so the direction is not really clear. I think the focal point of the markets would be the sentences that were read about the extended date being the expected terminal date, and I do think there's some risk that that will be seen as the first step—as you said, “lifting the screwdriver.” So it is a risk.

MS. MOSSER. I would agree with that. It is a small risk. Because of this renewal, the swap partners are aware of at least that portion of the press release, although not of the rest of the liquidity facilities, obviously. We informed them that some language along the lines of what the Chairman read would likely be in the press release. Their reaction in a number of cases was: “Oh, well, we’re not going to put anything like that in our press release,” and a couple of them were outright concerned about it. So there was a dispersion—some thought it was fine, and others not. I would agree with Brian—I think there is a risk. I don’t know that it’s large, but there is a small risk that it would be viewed as a bit of tightening.

MR. TARULLO. I presume that, if you had thought of this, you would have already suggested it, but does anything come to mind that would allow us to mitigate that risk?

MS. MOSSER. The last sentence that was added to the press release, which says the Board and the Committee would also consider expanding if things get worse, helps to mitigate that risk quite a bit.

MR. TARULLO. Thank you. Thank you, Mr. Chairman.

MR. SACK. The statement is conditioned on anticipated further improvement that hasn’t really been defined. So I think it leaves open some issues. If conditions just stay where they are, does that mean the programs will be extended? How much improvement is expected? And so on. I would just say it’s complicated to signal that so far in advance.

CHAIRMAN BERNANKE. President Lacker.

MR. LACKER. Is the risk all to the downside?

CHAIRMAN BERNANKE. I think it’s mixed—there are extensions going on as well as some trimming back.

MR. LACKER. Yes. But is termination also potentially a signal of the confidence we have in the economy and financial conditions? Is there a chance they'd interpret it that way?

CHAIRMAN BERNANKE. I'm not sure I want to litigate this here, although I'd be happy to have discussions with people. It's very conditional. If I could once more read just part of it: "Should the recent improvements in market conditions continue, the Board and the FOMC currently anticipate that a number of these facilities may not need to be extended beyond February 1. However, if financial stresses do not moderate as expected, the Board and the FOMC are prepared to extend..." and so on. President Hoenig.

MR. HOENIG. I have a clarifying question on the discussions around exit strategy and the LSAP. Would there be, then, a discussion at each meeting as to whether we should go to the "up to" limit? In other words, should there be a specific decision whether to go forward? I think you have to address that before you start talking more generally about raising the fed funds rate.

CHAIRMAN BERNANKE. Certainly. That's part of the policy strategy.

MR. HOENIG. All right.

CHAIRMAN BERNANKE. In just a minute we can take a coffee break, if that is okay. When we come back, we will have a bit more discussion among the group on the issues that were raised by the presentations. Let me just try to identify three topics that we might want to talk about.

The first one is Brian's recommendations on trimming back the various facilities or extending facilities. We'll have to take some Board and FOMC votes on that. You have Brian's handout that shows the recommendations of the staff. So if anyone has thoughts on any of those, that would be the first issue that I would suggest.

The second is the set of issues related to exiting from our expanded balance sheet and raising interest rates. Let me just say that many people have called for us to communicate more about this, and I think that's very important. The current plan is for the Monetary Policy Report, which will be issued in a few weeks, to have a section which will describe, in some more detail than we've given so far, the tools we'd be looking at to achieve the exit. We don't want to put in things that are very speculative. But to the extent that the Committee is comfortable with things like reverse repos, and so on, we'd want to describe those in that section. So any thoughts or comments about the relative value of different methods or concerns would be useful.

And then, the third topic would be just the things that Trish and Brian were raising and that President Hoenig alluded to, which is thinking about the asset purchase strategy. Even if we don't change our position at this meeting, do we want to begin thinking about a tapering strategy? Do we want to advise the Desk to change its reaction function? So we can discuss things related to that set of issues.

Of course, whatever else you want to bring up is fine, but I thought those three areas might be worth comments in the free discussion period.

Before we do that, why don't we refresh ourselves with about a fifteen-minute coffee break? Thank you.

[Coffee break]

CHAIRMAN BERNANKE. The floor is now open for people who'd like to make comments on the three topics I mentioned before the break or anything else that the presentations brought to mind. I want everyone to have a chance to speak, but I do hope we can get to the economic presentation today. If we can do this in 45 minutes or so, that would be very helpful. Would anyone like to start off? Governor Warsh.

MR. WARSH. Mr. Chairman, let me try to be brief but address a couple of the topics that were raised in the so-called question part of the discussion. And then I'll try to go through the topics that you mentioned briefly.

First, the remittance discussion, where I think we put that in legal terms—Seth was asked for decided legal judgments—and we put it in political terms. I think most of the remittance discussion actually is about credibility. In the event bad things happen and we end up with losses that are enduring, what does that do to the credibility of Fed actions? The Fed's ability to affect these markets typically comes not because of the size of the actions, but because of who is taking them. So I think that credibility could suffer in those circumstances, and I'll try to use that credibility idea to consider whether we are crowding in other investors to these markets or crowding out other investors for the balance of my discussion on your third point on asset purchases.

The Desk asked for our views on several topics. First, on the policy objectives of the asset purchases, I think markets have heard us say different things about what our objective function is. Mine would be to improve market functioning, to bring liquidity to markets that are not trading, to narrow bid-asked spreads, and the like. This would suggest having the Desk devote its resources to securities, such as off-the-run securities, that are less liquid. I think markets have heard other objectives from us, although not explicit objectives, such as to set price levels across Treasuries or MBS. I think we have rightly steered away from it. But they think that we are still cognizant of prices at some level and that we are trying to move rates lower. So the first question the Desk asked is: Could we collectively be clear on an objective function? I think we could, and I would suggest that your Humphrey-Hawkins testimony and Monetary Policy Report might be the best means of doing so.

The second question raised by the Desk was about expanding asset purchases. I'm exceptionally uncomfortable with expanding asset purchases, particularly now. The Desk, I think, had a preference, understandably, for increasing Treasuries. That doesn't fit my preferred objective, which is that we're entering markets to improve market functioning. So, on that basis, I think that market was working well before we got in it, and I'd say it's still working well. But if we got into it in significant size, I could see it actually working less well. Had risk-free rates fallen markedly since we started purchasing Treasuries, Mr. Chairman, I would have expected some to say: "Well, then we should do more of it." But risk-free rates have increased since we started purchasing, yet I hear some say, "Well, we should do more of it." So I'm not sure what fact scenario would have suggested doing less of it, and it makes me a little uncomfortable. I think Brian Sack did a great job of explaining how all-in costs of capital for real private companies in this market have come down, and meaningfully so. I don't think that has much, if anything, to do with our Treasury purchases. It could have much to do with the suite of things that we've done in the last 20 months, but I think it gives too much credit to suggest that somehow that's related to the purchases of Treasuries. I don't think that our science is so good that we know that increasing the size of our Treasury purchases to \$450 billion, but not to \$750 billion, would have a modest, marginally positive effect. It's not at all obvious to me where risk-free rates would be had we avoided buying Treasuries; they might have been higher or they might have been lower. But I must say I'm not convinced, and as a result, not at all comfortable expanding further.

In terms of the expanding purchases of agencies, I think the Desk rightly warns us that doing so could actually do some harm to that market. Given how big we are to the new issuance market there, I think we might well have already done some harm. That is, we entered that

market when it wasn't functioning, and we helped improve market functioning. But to the extent that we're 70 or 80 percent of certain classes of securities, I would say that that two-sided market is not forming well, and I would be very hesitant to go further there.

The third question raised by the Desk: What about flexibility between and among asset classes, that is, what if we just pool all of this stuff together and say we're smart and we're going to use the following criteria? I think that would be read by markets to mean that we're increasing potentially the purchases of Treasuries. I think that would risk crowding out those investors who would think that there are strange things afoot, so I don't think that's a prudent idea. In terms of flexibility within asset classes, I think markets have learned that we're not as responsive to changes in rates as they would like, and my own sense would be it's a noble goal to have flexibility, but flexibility in a vacuum will lead to continued ambiguity or accentuated ambiguity. So I don't think that that's a great way forward.

In terms of increasing flexibility to be more responsive to market rates, I just don't think we should be fighting against the tape here. I'm not sure we know what the real market-clearing rates are for some of these things. In terms of securities lending, which I think has been much abused outside of the Federal Reserve and poorly understood by market participants, I share Brian's view that our being in the securities lending business could actually be useful to solve what I would consider to be the preeminent policy objective of helping market functioning improve.

So that's just a quick list of some of the things that you asked us to address, Mr. Chairman. On Brian Madigan's modifications of various liquidity facilities, I think it is confidence-inducing, not risk-inducing, for the world to know that we are thinking about exits. Even those market participants who think that the economy could well unwind again will believe

that we can be more comfortable improvising in a forward-leaning way if we can at the same time be thinking about how we get out of this when conditions warrant. Without going into detail on Brian's list, I think it's constructive, and I think that the Thursday press release is likely to be in some ways more impactful to market's understanding of our way forward than our FOMC statement on Wednesday. Thank you.

CHAIRMAN BERNANKE. Thank you. President Plosser.

MR. PLOSSER. Thank you, Mr. Chairman. On your three questions, I agree with much of what Governor Warsh just said. In terms of exit strategies, I think the staff did a terrific job in thinking through this and in the very elegant way they laid out the options. In my own personal view, I think we could be a little more aggressive in either cutting quantities or moving minimum bids up in some combination, particularly for the TAF and even for some of the others, in terms of the haircuts. In general, I'm very supportive of the strategy. The only thing I was very disappointed in was the GSE facility. That facility came on not quite a year ago. It has never been used. The Treasury got funding to support the GSEs. I would have liked to have seen that facility rescinded back in September or October after the Treasury got funding. I still think it ought to be rescinded. I don't think that is a place we ought to be. I do think the announcement of these modifications to the facilities and particularly the language in the press release that the Chairman read will, in fact, be positive for the economy as a whole. There may be some places in the markets that will lose the subsidies that some of these things might be providing, but on net I think it will be a good signal to the marketplace.

On the tools for managing the balance sheet, again, there were a lot of interesting ideas. I think many of them could work. I would just like to reiterate how strongly I feel about not wanting to have Fed bills. It is a bad idea, not because it can't manage the balance sheet, but

because I fear that it poses incredible political risks to the System. It's an opportunity for interference, an opportunity for the Congress and the political parties to view this as another way to intrude on Federal Reserve policymaking. Although we may ask for the autonomy to make those decisions, that doesn't necessarily guarantee that they will grant it. I have expressed this view before. I feel very strongly about Fed bills as not a good way to go in this environment; many of the other tools, though, such as reverse repos and others, could accomplish much the same thing, and I would encourage us to continue to work on those and the other options, because they entail much less potential political risk.

On the LSAP issues, I agree with almost everything Kevin just said. Our objectives, I thought, were fairly clear; that is, we're not targeting a price or a yield. The markets seemed to believe that we were. I think we would be well served, as was suggested, by clarifying it, perhaps in the Chairman's testimony in July, to try to reinforce that and disabuse the markets.

I was struck by some of the other things that the Desk was talking about. I want to read a couple of sentences, and I quote: "Staff sees evidence of both stock and flow impacts from our experience so far, although we cannot be certain of the precise mechanism by which they work, or if the effects are permanent or transitory. That leaves a considerable degree of uncertainty in designing and implementing the LSAP programs." That suggests to me we don't know exactly what we're doing or how it's working, and so that argues against flexibility and the notion that we're going to go in there and play some game to raise this yield or lower that spread when, in fact, we don't know how these mechanisms are working. So I guess I would steer away from the flexibility. I think that the "slow but steady" path is just fine, and that we can clarify that we are not targeting a particular yield or price, but rather we're encouraging market functioning and liquidity, and leave it at that.

In terms of the expansion, we still have a lot of purchases we could make if we wanted to. I'm opposed to going out and authorizing more purchases of agency debt, MBS, or Treasuries at this point. I don't think we need to make that decision right now. And if anything, things are looking somewhat better. So I would oppose that.

I would also be against this notion of going in and buying hybrid ARMs or creating options. I think we do that because we can. It's not clear to me what the objective is. We have been pretty unclear as to exactly how effective we have been in some of these markets on some of these prices and yields and what exactly the impacts are going to be. I think the evidence is pretty mixed on our ability to go in and sort of micromanage various subsectors of these markets. So I don't see any particular reason to expand into hybrid ARMs or to sell put options on longer-term assets. I just do not think that is going to help us very much. Thank you.

CHAIRMAN BERNANKE. Thank you. President Fisher.

MR. FISHER. Mr. Chairman, you're going to hear some similarity to what you just heard from Governor Warsh and President Plosser. I agree with most of the statements that were made. I feel particularly strongly about the issue of the Treasuries. As Governor Warsh mentioned, I'm beyond particularly uncomfortable, I am especially uncomfortable. I think there's no evidence that it has a positive impact. We can tell ourselves and we can tell the marketplace that, indeed, the corporate debt market has improved. I'm rather pleased with that; obviously, we all are. I'm not sure there's direct causality, but I do think the risk-return tradeoff is way too negative. Even if we figure out a cute way to say it, there still is a suspicion that we're monetizing deficits, although we've been much firmer in our public statements on that. And I realize that in chart 4 that's just a somewhat important factor, but it is a factor, and I worry about that.

I want to come back to Brian's recommendations. I think we have to be very careful that we're not perceived as basically providing facilities to prop up institutions that are too big to fail at the expense of other institutions that desire to grow. In my earlier remarks, I used the wrong term. I said "political," and I meant "optical"—I think the optics are rather poor. If TAF is being used, as was pointed out in the staff paper, principally or significantly by two institutions that are too big to fail, I think we have to be careful about that. President Plosser made a suggestion that we might limit it even more severely in terms of the amounts; I think he was suggesting a pricing impact there. Obviously, classical central banking is to lend at a penalty rate. But that penalty rate is a gift compared to what we would be charging smaller and regional banks. Therefore, I would ask you to go through the list and think of which of these facilities are really in place to prop up institutions that are too big to fail. And I would be curious as to which of those facilities you consider as actually having an impact there and as helpful on that front and which are not. But I reiterate my concerns about the optics of TAF and the primary credit recommendations.

On the issue of exiting, obviously the market is asking for it. Everybody's asking for it. I do think the Monetary Policy Report, Mr. Chairman, is the appropriate vehicle, and, perhaps, your Humphrey-Hawkins testimony.

Like President Plosser, I personally am uncomfortable with Fed bills. I don't think it is politically feasible. The staff points that out. I worry about the market that would be made in those and the derivatives that would be written from them. I have spoken to that before, but I don't think that is a particularly wise recommendation to make.

I will make one last recommendation, only half in jest, which is that we get rid of the TALF program and we call that the Bill Nelson Relief Act. [Laughter] Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. If we got rid of it, it would be a relief for Bill Nelson, I'm sure. [Laughter] Governor Tarullo.

MR. TARULLO. I'm now a little confused. It sounds to me as though we're now having the monetary policy discussion, and if that's what we're going to do, that's fine. I just want to know if that's what we're actually doing.

MR. FISHER. I was just reacting to the three points that were raised.

MR. TARULLO. I think we're now getting to the substance of what I thought was going to be tomorrow's discussion.

CHAIRMAN BERNANKE. Well, I'll leave it to people to do what they want. I think the issues that we were discussing were the exit tools, the tactics for the Desk in dealing with large-scale asset purchases, and the winding down of the programs. Those were the things that I asked people to talk about, so perhaps we could focus on those. President Yellen.

MS. YELLEN. Thank you, Mr. Chairman. I'll try to be brief and confine my remarks to the three things that you asked about. With respect to the credit and liquidity facilities and the timing of trimming them back, I thought that Brian and the staff put forward a very well thought out proposal, and it's a proposal I completely support. I think it is important to include language of the type that you read from the draft that you're preparing. I'll say this again in the policy round, but I want to emphasize that we have to be very careful not to signal an early end to policy stimulus, and while I see a good reason to withdraw the facilities in the manner that you

set out, I think it's very important to put in place language that leans against the idea that we're looking for an early end to policy stimulus. So I support the proposal and the language you read.

On exit strategies, I do think you indicated that you might discuss this in detail in the Humphrey-Hawkins testimony. I think that's absolutely the right place to do it, and I think it's important to indicate that we have complete confidence in our ability to withdraw stimulus when we need to do so, that we have the tools to do it, and that when the time comes, which is not now or soon, that we will proceed to do it.

The wording for monetary policy alternative B has been changed, but the phrasing in the original draft of B is the type of thing I think we have to be very careful to avoid. It suggests that we're not sure if we have the ability to exit and, therefore, we will carefully consider whether we should expand our balance sheet further. I believe we do have the tools. I thought the staff did a wonderful job of preparing the memo on exit strategies. It convinced me that, if the only thing we had to work with was interest on reserves, it probably would be sufficient. I thought this idea of strengthening it through collateralized accounts was really clever, was implementable, and was almost foolproof. And I would love to see the staff do the further work that would be necessary to confirm that that is a foolproof technique, adding to the arsenal of tools, such as triparty reverse repos, and making sure that that is entirely workable. To me, it seems that package, if we do nothing else, is sufficient for us to assert confidently that we can do what is needed when the time comes. But that time is not now.

On the LSAPs, they obviously do get into policy issues, and let me try to leave some of the policy issues around this until tomorrow. Initially I was an enthusiast for long-term Treasury purchases. I thought the purpose of it was not only to improve liquidity and market functioning, but also to influence yields to push them down. Now, I didn't see it as a commitment to a

particular rate, which would be very dangerous; but, other things equal, and depending on our assessment of overall financial conditions and the outlook, I saw it as an attempt to push rates lower than they would otherwise be. On theoretical grounds, I believe there's a very strong case that they should have some effect, but it has been awfully hard to identify exactly what that effect is, and I think that we're beginning to run into costs of pursuing that further. I think our reputation for independence is suffering, and the public is obviously concerned that we're monetizing the debt and that it's going to lead to an outbreak of inflation. I have to say that I completely disagree with these views, but I can't say they're not prevalent. I encounter them day in and day out. So at the present time, I would say the benefits don't merit the costs, but I wouldn't want to see Treasuries taken off the table if conditions were to deteriorate and attitudes were to change.

I think our communications around this have really been a problem, and as I consider the concrete proposals the staff put forward in their memo, it seems to me that improving our communications is important. The thing that most concerns me is the autumn expiration date for our long-term Treasury purchase program. That's coming up quickly. We either have to decide now or we'll have to decide in August. There will be a lot of market speculation. In the meantime if we could do something at this meeting to clarify rather than keep the market guessing, I think it would be desirable. This brings me to the suggestion—which is a policy decision, but to my mind, in some sense, a relatively small one—to add a sentence that says something like “to align the end dates (or the timing) of the three asset purchase programs, we've extended the current pace of Treasury purchases through the end of the year, bringing the total size of the program to \$450 billion.” That would say they are all aligned at the end of the year

and that we're going to decide what to do with these programs. I would like to see us take that off the table.

Quickly, on other issues, I could see some merit in flexibility in terms of the allocation of our purchases between MBS and Treasuries. We didn't have a concrete proposal, but assuming that we're not going to expand the overall level of our Treasury purchases, except perhaps extending the program at the current pace to the end of the year, then I agree that this isn't the right time to go in that direction.

The idea of leaning against the wind—I could see some merit in it, but it will be incredibly complicated to reach agreement and communicate to the Desk or to the outside world what we're doing, and I wouldn't go there now at all. I'd just maintain steady as you go.

I do think the idea of adding hybrid ARMs to the program is very constructive, given what's happening in the housing market and given that mortgage rates have backed up so much, so if that's a viable, practical possibility, I would move in that direction, too.

CHAIRMAN BERNANKE. Thank you. President Stern.

MR. STERN. Thank you, Mr. Chairman. In thinking about the three issues you raised, I start from the presumption that we don't need to convince market participants at this stage that we will do what it takes to, if possible, restore stability and to encourage financial and economic health. I think we need to convince them that we have an exit strategy and that we are prepared to execute it in a timely way.

So against that background, with regard to the trimming and extending of the liquidity facilities, I'm generally fine with the proposal that Brian described and the language that you put forward. If it were my nickel, I might tighten up that language and make the commitment to end

the programs a little more forcefully, but the Humphrey-Hawkins testimony might be a better place to elaborate on that whole set of issues.

With regard to the LSAP, those suggestions strike me as solutions in search of a problem. What I mean by that is that financial market conditions have been getting better. Now, maybe interest rates have backed up, but there are a number of explanations for that, and it's very difficult to sort through exactly which might be responsible. If conditions hadn't been improving, I might be interested in trying to fine-tune the LSAP, but because they have been improving, I don't see any great value—in fact, I don't see any value whatsoever—in going down that path, and I would avoid it.

With regard to exiting and raising interest rates when the time comes, I guess I think there are a variety of tools that would enable us to address the situation. They've been discussed. I am not terribly concerned about this.

I don't quite understand the issue about having committed ourselves to a permanently large balance sheet. The size of the balance sheet is up to the Committee ultimately, and if we decide that we want to shrink it, then we simply give the directive to the Desk that it should be shrunk, and they will have to execute that. So I don't see that as a problem.

CHAIRMAN BERNANKE. Thank you. President Hoenig.

MR. HOENIG. Thank you, Mr. Chairman. I would start with Brian's description, and I'm generally supportive of this proposal. It does give an end date, and I agree with President Stern—I think the firmer that end date is, of course, the better.

On the TAF issue that President Fisher brought up, I think he has valid points, but I do think we need to look at that pretty carefully, and I know you are going to do some follow-up on that.

And because we're talking about exit strategies, and these liquidity facilities are part of it, it does extend to the LSAP. From my perspective, the most unusual thing that we have is the LSAP, and I think that's where we need to focus when we think about exit strategy. I think at each meeting we should first make a decision about whether we even want to go to where we have said the "up to" figure is. It becomes very important that we make a rational choice around that, because the first step of exiting is not going any further. I think that's critical and takes time and effort. I also think having the equivalent of GSE assets on our balance sheet with these MBS is questionable in terms of the role of the central bank, if we have, in fact, stabilized the markets. And I am very uneasy about purchasing long-term Treasuries. Perhaps it is optics, but I think in some sense it's also reality—you are monetizing the debt. So that's how I think about our exit strategy across all the actions we've taken.

In terms of the flexibility on how to administer this, I think we should not have flexibility. If we met the needs of the MBS that we put on, and now our additional purchases are causing other issues, then that's a sign, perhaps, that we shouldn't be going to the limit. I think we should be aware of this and take note of it and not just say, "Well, we've got to get to the total. Let's shift over to long-term Treasuries." There's information in the feedback we are getting from the market that we ought to use and not ignore. That's how I look at your three questions, and less flexibility in the third is better than more.

CHAIRMAN BERNANKE. Thank you. President Evans.

MR. EVANS. Thank you, Mr. Chairman. I'll take the points in the sequence that you mentioned.

On Brian's and the staff's facility recommendations, although I long for the day when we are comfortable with markets to the point of ending 13(3) authority, I'm not bothered by the

individual programs. I think they're well put together, and I think the plan, as stated, is a good one. Frankly, I think markets will see the conditional statements in the release as indicating our willingness to keep the 13(3) authority for a time. I wouldn't think that they would think we're about to ramp it down, but we'll see. And I do think that ending 13(3) will be done appropriately, it will be positive, it will be a boost, much like the SCAP.

On the exit strategies and the reserve management tools, much as President Yellen indicated, I tend to favor the tools that strengthen the interest on excess reserves mechanism, and there are a number of those that, put together, should strengthen the arbitrage. Reverse RPs, I think, are also a good tool. If we're looking to the money market funds as one source of liquidity, that's going to sort of alter the commercial paper market, since they're a big source of funding there. And I just don't know what the implications are. We'd want to understand expected dysfunction in that market—as opposed to unexpected dysfunction—to see what we'd be doing there. But reverse RPs are quite good, I think.

On the comment that we should try to project complete confidence in our ability to do this, mostly I agree with that. My first reaction is that you've actually talked quite a lot about exit strategies already. And in your Q&A with the Congress, I'm not exactly sure how much of what you intend to say will be new. Just your saying it is newsworthy of course. [Laughter] But I'm not quite sure how that will play out. I was very struck by the extreme scenario on net income which indicated that the balance sheet would be so large that we could find ourselves in a situation where we are challenged by it—challenged in an optics sense, not in our ability to create new reserves to pay and fund what we need to do. As we've learned through the introduction of all of our facilities and in using our authorities, there is a risk to the institution at

some level that we should be mindful of. I should add that I think it is being handled very well so far.

Finally, on the large-scale asset purchases—and I'll try to be true to not talking about policy on this. The Committee selected a number, for example, for Treasury purchases, of \$300 billion, and I thought that it would be implemented to that number. So if tapering effects are important for a given time frame, then I would have envisioned going at X dollars per month for a time, and then within the last one or two months tapering to half of that. That allows the Committee to revisit it in a timely fashion to say, "Should we extend it?" as President Yellen suggested, or it could be tapered on to \$300 billion. But it would be a policy decision that the Committee makes. I'll leave it at that. Thank you.

CHAIRMAN BERNANKE. Thank you. Governor Kohn.

MR. KOHN. Thank you, Mr. Chairman. I think I agree with everyone else. We absolutely need a framework that people can have confidence in for how we're going to exit the current balance sheet and raise interest rates. But as we'll discuss tomorrow, I think it's way too early to begin that exit, and I do worry about signaling an exit before the economy is really ready for it. But we do need to have the framework. In that regard, I'm comfortable with the liquidity facilities proposals in Brian's memo. I think basically they recognize and validate what's already happening in the market, and that's fine. And I was comfortable with the sentence you read, Mr. Chairman. I think it was sufficiently conditional, and I wouldn't strengthen it. My concern is that, if we find ourselves in a position where we don't want to wind down, we haven't already told people we are going to wind down, but rather we have told people we are going to be looking at things.

I came in a little like President Fisher, looking for perhaps raising that TAF minimum bid rate, thinking that, unlike all the other facilities we have, that's one that doesn't quite wind down as automatically as markets improve. My mind is still open on that. I haven't heard a lot of support for that, but I thought raising that would reinforce the winding down. I appreciate Brian's point that it's an auction facility—they can always cut the amounts rather than raise the price; but raising the price would reinforce that. So I guess, on balance, I would be slightly in favor of raising the TAF penalty rates.

On exit tools, I was actually encouraged by the presentations by the staff—Spence, Trish, and others—which indicated that we do have a lot of tools. And, like President Evans, I see these tools for sterilizing or reducing reserves working together with interest on reserves, and I feel more confident than before I read the memo that we can accomplish a lot. I guess you're going to have to work on these reverse RPs—who the counterparties are (including the GSEs) and whether you need to diversify past the dealers. I'm not totally convinced you do need to; the dealers are there to be intermediaries, and they can play that role. Anyhow, that would be a good thing. And the time deposits I thought also were a good thing.

I wouldn't rule out selling assets quite as much as some of you would. We took these special actions to lower rates—I will come to that next—but if we're in a situation where we are worried about inflation, we can undo them, although maybe not in huge size. I would think selling some of the portfolios, depending on the circumstances, might not be a bad idea.

That brings me to the LSAPs. My objectives were different from yours, Governor Warsh. I voted for this in order to lower interest rates, or at least to make interest rates lower than they otherwise would be. It was keyed to the macroeconomic outlook last March, which was pretty dire and getting worse all the time, and we had run out of fed funds ammunition in

December. So I was not uncomfortable. I was in favor of diversifying our portfolio of purchases into Treasuries. I think the monetizing problem is keyed to the fiscal deficit outlook. If that weren't so uncertain and looking so unsustainable, I don't think people would be worried about us. But it is uncertain and looking unsustainable, so I think we need to be careful about the interaction of monetary and fiscal policy. Therefore, I would not be in favor of increasing those purchases at this time.

I came into the meeting thinking about some flexibility across instruments within the total amount and across time. But I've been discouraged by the discussion at the meeting. I think we can set a price or we can set a quantity, but setting the relationships of price and quantity in a clear way is just very, very hard. So I think I'd stick with what we are doing now.

I would be okay with small purchases of hybrid ARMs. I think it might encourage that market a little bit and help the mortgage market, which has been adversely affected by the uptick in Treasury rates. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thanks. Vice Chairman.

VICE CHAIRMAN DUDLEY. Thank you, Mr. Chairman. I think we have to be really careful about our communications in terms of discriminating between our ability to exit smoothly and implying that we're about to exit. I will probably come back to this point tomorrow. The anxiety that I have about inadvertently implying to the market that we are exiting soon is particularly high now, because the market has already priced in a lot more tightening than most of us think is likely over the next year or two. That said, of course, we have to be prepared for exit, and I think being prepared for exit and articulating that is really, really important in keeping inflation expectations well anchored, and also in keeping the dispersion of inflation

expectations compact. So I think we definitely have to do that, but I think it's tricky to do one without implying the other.

In terms of Brian's recommendations on the facilities, I'm pretty comfortable with all of it. I do want to make sure the language stays where it is, though, and doesn't get more definitive about what happens in February. I think February is a long time away, and I wouldn't want to prejudge what we're going to want to do or not want to do in February. I think where we are right now in terms of the language is about right. It basically says there's a possibility that we might not extend it, so the market is put on notice. But it doesn't necessarily commit us to ending the facilities.

On the TAF, I am on the other side of that issue from Don on the rate rise. It's not a big deal for me, but let me just explain why I am on the other side. I think raising the rate on TAF will be seized upon by some as the beginning of raising interest rates. So it's not the TAF rate rise that bothers me per se. I can certainly understand the argument for doing that in the small, but I'm a little worried that if we do it, people will say, "Oh, look, this is the very beginning of the rate hikes, because they have now raised the rate on the TAF." There's also a second, more subtle issue on the TAF, if we are actually going to go to the sporadic TAF auctions over the longer term. We probably can't really do that in a normal environment with a penalty rate. If you think of the transition on the TAF, we'd have to move to a penalty rate, and then later on, as we go to the sporadic auctions, we'd actually have to lower the rate again. That just seems a little confusing to me. But my main concern is the signal in terms of monetary policy that people might draw from raising the rate.

On the LSAP, I don't feel very defensive about what we've been doing. After all, we did get a really good mortgage refinancing wave—that was the point of the exercise. It's hard to

know how much of it was MBS versus Treasuries, and we'll never really know for certain. But I feel pretty good about basically having achieved that objective.

In terms of Treasuries, I don't think there's any appetite for going much larger. I think the choice is really between standing pat and going to, as President Yellen said, \$450 billion and extending it through year-end. The advantage of the latter is that you don't have to make up your mind quite so soon, but the disadvantage is that it seems like a pretty weak response. It shows a lack of sort of confidence in what the Fed is doing with this facility. So I guess I'm slightly leaning toward standing pat, because I worry that the other option would be viewed as too little to be significant. I think the suggestion about hybrid ARMs makes a lot of sense. In some ways, if we don't do that, we're basically distorting the relationship between the fixed-rate agency MBS and the hybrid ARMs, and it's not really clear why we would want to do that.

CHAIRMAN BERNANKE. Thank you. Governor Duke.

MS. DUKE. Thank you. On the question of extensions and modifications on liquidity facilities, I'm generally in favor of the proposal, but I wonder if one option might be to raise the minimum rate for TAF at the same time we increase the spread on the primary credit, so that we'd be treating the two different types of borrowers the same way.

On the exit strategies, it strikes me that the whole discussion is incredibly similar to a normal exercise in asset-liability management that goes on in banks all the time and that we should probably be paying attention to the same kind of tools that are used in banks to simulate various possibilities. Regarding these tools, I don't think they're mutually exclusive, so some modeling of an optimum mix—a funding mix if you will—of all of the various tools, taking into account some of the different barriers that we might run into in different markets, might make some sense.

Also, I'd be interested in some sort of regular reporting, whether it is in Notes or the Bluebook or one of the other books, so that we keep an eye on the potential costs of the exit strategies in a number of different environments. As a banker, I have been in a situation where I have looked into the future and have seen losses that would arise from unwinding positions that I had taken. Of course, at that time, I was never able to adjust my cost of funds absolutely. [Laughter] So it occurs to me this could involve an incredibly magnified political risk. There's a huge temptation not to take those losses when the risk associated with taking the losses is very high. So we need to make sure that we're paying attention to those costs, particularly if they would bring us under political pressure at the same time that we're doing something that's politically unpopular to begin with. So, again, I think modeling those out is important.

I guess the statement that struck me the most is that the banking organizations have not discussed with System staff the possible effects of increased Systemwide reserves. I haven't seen any indication that anybody anywhere in the banking industry has thought about the implications of these very high reserves in the system. I've been trying to think what that effect might be, and, frankly, I don't know. But it strikes me that this level of reserves is going to have some sort of effect, so we should start to think about that, too. Hopefully, some of our researchers can come up with some possible impacts.

Finally, on flexibility, I'm probably, again, headed dangerously close to the policy round discussion. When we first started these programs, I wasn't entirely sure how much we would need, so it strikes me that, if a given purchase amount is beginning to impair functioning in any market that we are in, we have to wonder if that purchase amount minus one is also doing anything positive in that market. That would seem to indicate that certainly we're getting close

to an exit for agency debt. And I wonder, as originations go down, whether we end up in the same place with the MBS. Those are my comments, Mr. Chairman.

CHAIRMAN BERNANKE. President Rosengren.

MR. ROSENGREN. I agree with Brian's recommendations. In terms of the TAF option of raising the minimum bid rate, I come out where Governor Kohn does. There are several large institutions that are borrowing heavily from the TAF that are just holding them as excess reserves. I think having a 10 basis point charge and making it a little bit costly actually does make sense; it will probably bring down the TAF borrowing somewhat, which, given the size of our balance sheet, probably also makes sense.

In terms of the tools for exit, I agree with virtually everything that President Yellen said, so I'm not going to repeat it.

In terms of the asset purchase strategy, we don't need to buy \$1¼ trillion just for market function and liquidity in mortgage-backed securities. We weren't trying to set interest rates, but we were certainly trying to influence interest rates. There's no reason to do something of that magnitude unless we're going to influence interest rates. So I do think that there's still a little bit of difference around the table about exactly what we think these programs are intended to do. But we made a distinction between quantitative easing and the asset side of the balance sheet. To me, that meant that we're trying to get the financing costs lower. It's hard to break this out from the discussion for tomorrow. But if we're not happy with where we are on our dual mandate, this is the only tool we have. And the way it operates has to be through the cost of financing. So, it's a topic for discussion for tomorrow, but I think we have to make that link. We can't talk about it separately.

CHAIRMAN BERNANKE. Thanks. President Bullard.

MR. BULLARD. Thank you, Mr. Chairman. I just have a few quick comments. I agree with all the points in the Madigan memo. I think it does recognize what is happening with our liquidity facilities. I have advocated before that we get them all priced as backstops and not that they actually need to be used at every point in time. I would also announce a rescission date for GSE lending. Couldn't we make that February 1, 2010, as well? That would push it off into the future and would line it up with the other dates as opposed to doing it immediately. I would go ahead and raise the minimum bid rate. I don't feel strongly on that. I guess I come out where Governor Kohn and President Fisher have. My thinking on that was that we could encourage more-normal market functioning there. Vice Chairman Dudley brings up a good point, namely, that it sounds like raising an interest rate. I think that's a communication issue, and that would have to be handled appropriately.

On the issues related to exiting, my overall reading is that there are some very promising but unproven ideas here, mostly to do with interest on reserves and reverse repos. We think they'll work, but at this point they're not really proven. I guess I'm reluctant to go further with asset purchases without more concrete ideas on how we'll manage this going forward, although I do admit that these are promising.

The current policy response to the crisis has been to lower nominal interest rates to zero and more than double the monetary base. I think this discussion indicates that that increase in the monetary base will be very persistent, which is unprecedented in post-war U.S. history. I am worried that we don't really know what the implications of that might be, and we don't really have tools in place to manage that. So we're not really exiting from that increase in the base, we're just saying: "That was our response. We're going to more than double the monetary base, and we're going to see what happens."

On asset purchases strategy, I'd be fine with the tapering off. I don't feel really strongly on that. I think if we stick with our dates, the exit might go fine on the Treasuries.

In the current environment of large fiscal deficits, as several people have mentioned, including Governor Kohn, there's always going to be talk about monetizing the debt. I just don't think we can get away from it in this environment. Anything we do that smacks of buying up more Treasuries is going to be problematic. So even though I have advocated in the past for treating MBS and Treasuries and debt all as one package and letting the Desk manage it, now I think it may not be the best thing to do.

I'm also sympathetic with President Rosengren, who spoke earlier this afternoon about a state-contingent reaction function. I have advocated for this before here, and though I know we are a long way from that, that's really what you want. You want to be able to communicate to the public that if the data come in a little bit worse, then we're going to do a little bit more, and if the data come in a little bit better, we're going to do a little bit less. That's the kind of thing that you want. You have that in something like a Taylor Rule for interest rate policy. You'd like that for asset purchases. We just haven't been able to formulate something like that. I'd like to encourage us to keep thinking in that direction. After all, zero interest rates might go on for several years, so it's not as if this situation is about to end. So I think we should still keep thinking about that, but I know that we're a long way from that at this point. Thank you very much.

CHAIRMAN BERNANKE. Thank you. President Pianalto.

MS. PIANALTO. Thank you, Mr. Chairman. I also support Brian's recommendations on our credit and liquidity facilities. In regards to tools for exiting, I am also very appreciative to the staff for the excellent work that they did. I am now more confident that we have the tools. I

am also very much in favor of using the Monetary Policy Report to describe the tools that are available to us. And I prefer focusing on those tools that we currently have available to us that don't require any legislation or other changes. I also agree with Governor Kohn's comments that it's too soon to consider a change in policy, but I also agree that it's not too soon for the Committee to start talking about a framework—or the process that we're going to be using—to decide how we are going to apply these tools.

In addition, I think it would be helpful for the staff and this Committee to start looking at some alternative language for use in statements that will describe this environment that we are going to be in, where we are simultaneously adjusting our fed funds target and managing the size of our balance sheet. As President Yellen stated, I think that getting prepared to communicate is just as important as getting ready to use the tools. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Lacker.

MR. LACKER. Thank you, Mr. Chairman. I'll start with our instructions to the Desk on asset purchases. I agree with Governor Kohn, and I was going to express it the same way—for clarity of instructions, fixing a price or fixing a quantity really can't be beat. I agree with President Bullard that a reaction function would be preferable on some grounds, and if we were able to communicate a well-understood one, that would be great. But in this instance I just don't think we have the time to communicate that in a way that does not add uncertainty about the exact way in which we're likely to react to incoming data. Moreover, I want to emphasize that I think we should give the Desk less discretion, and I do that without any lack of respect for the tremendous acumen and skill of the people on the Desk. It's just that it places an impossible burden on them to operationalize our terms of art in the directive and to communicate that

coherently to markets in a way that doesn't add chatter that we don't need and that distracts us from what we're doing.

As for monetizing debt, we're monetizing mortgage-backed securities just as much as we're monetizing debt. I think the danger—and this has been the danger this spring—is conveying that the amount we monetize might vary with the amount the government issues. That's something we have to stay away from, and it's another reason not to go down the path of seeking to adopt a kind of a reaction function that tries to skin a bunch of cats.

As to our exit strategy, I think we're likely to be in this situation with zero interest rates for a while. But I have a hard time ruling out the possibility that, if the Greenbook's expectation comes true, towards the end of the year there will be another gigantic sigh of relief, much as we experienced after the bottom in March—maybe not euphoria, but a turn in expectations and sentiment that makes the world look different and makes us at least want to think about backing away from stimulus before the end of the year. I have no idea how likely that is, but I think we need to pay attention to the amount of stimulus we're providing and the effects we're having. I think we need to pay attention to the banking system, in particular, and to monitor bank asset holdings and their liquid liabilities and that channel for policy. Sure, we were intervening in order to reduce MBS rates and to reduce Treasury yields below what they otherwise would have been. Granting that, it's not clear which of those two channels had the bigger effect. But we need to be thinking about the timing—what it's going to look like when it's going to be the right time.

I think that it's too early to signal that we're thinking about exiting, but it's not too early to explain in the Monetary Policy Report that we are thinking about what it would be like. We're not thinking about doing it yet, but we're planning and thinking carefully about the

mechanics of it. I think that raising the interest rate on reserves seems quite likely to succeed. To my mind, the most logical and natural path forward on this issue of reserve management is to use this opportunity to back away from federal funds rate targeting. We've backed away from nonborrowed reserves targeting. If historically, by some fluke, we had been targeting RP rates over the last three decades, I don't think we would have known the difference, and yet RP rates never equaled the fed funds rate. So I don't think we have a real strong reason to tie ourselves to the federal funds rate as opposed to the RP rate. The interest rate on reserves in this regime is going to be the relevant marginal rate for banks. So when the time comes, I think we just back away from the target, explain that, "here's our policy rate, the interest on reserves," and let it go at that.

As a result—and this is sort of related—I think we should be really hesitant to engage in clever tinkering to try to get around problems with this, as good as we seem to have been at clever tinkering recently. So to my mind, reserve collateral accounts are just not worth the bother. In terms of changing the leverage ratio and exempting some institutions, I don't think we should tinker with supervision and regulation just to solve a monetary policy problem. I find the guidance thing to be even murkier.

I'm against Fed bills. I don't want us to have that ability. I don't want to make us a target for those who would want us to finance stuff. We've gotten involved in housing finance, and I think one of our biggest political problems in the next couple of years is going to be backing away from housing finance, the way we had to back away from it in the 1970s. That transition out, I think, would be made more difficult if we have this off-balance-sheet thing. I was stunned to learn in the staff memos that if this had full faith and credit, our books would be consolidated with the U.S. government. To me, that has some optical characteristics that I think

are dangerous for us as an institution. We'd be seen as on balance sheet and yet outside of appropriations. So I just don't think we should go down that road.

Hybrid ARMs—again, sort of clever tinkering. For us to go to these little markets and kind of try to pick up some effect just opens us to rent-seeking. Maybe we've gotten good at handling it, but it just doesn't seem worth it to me.

As for the facilities, I would have terminated them all. [Laughter] I wouldn't have initiated any of them anyway, but given the Board's decision, I'm willing to go along with the foreign central bank swap arrangement. But let me say about rescinding the GSE facility that I am wildly enthusiastic. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Lockhart.

MR. LOCKHART. I'll help you with your time, Mr. Chairman. Everything I believe has already been said by one person or another.

CHAIRMAN BERNANKE. I thank you. Just very quickly, let me summarize a few things. I think there was a lot of support for Brian's recommendations. The only issue I heard was some discussion about raising the bid rate on the TAF. You can raise the rate by cutting the quantity or by raising the rate. I think the optics are a little bit risky to be raising the rate. I would be inclined to go with the recommendation that the staff has put forward.

On the exit strategy, I guess I disagree with President Lacker. I think it's important for us to have these other tools to diversify our ability to sterilize reserves. A number of things are very interesting—reverse repos, collateralized lending, term deposits. And we didn't talk about redemptions, but redemptions actually are part of this, too. That's going to be significant over the next couple of years. I think most people agree that it would be very valuable to have as

detailed as possible a discussion of the exit strategy in the Monetary Policy Report. And I think there was good support for that, and we should proceed with that.

Finally, on the Desk and flexibility, there didn't seem to be much interest in giving you a great deal of flexibility. [Laughter] But I want to make a couple of points. One is, clearly, we don't want purchases to be counterproductive, so if you are overwhelming the market, or something like that, you should either adjust or let the Committee know about it. I think there was also a good bit of interest in your promoting liquidity and, in that respect, considering off-the-run securities, things of that sort. But I personally also would support lending securities. I think that just adds to the liquidity in the market. We'll talk more tomorrow about asset purchases as a strategy, and so on.

Let me just say to President Plosser and President Lacker, that we should close the GSE lending authority. It turned out to be an inconvenient moment, but we will do that as soon as we can find an appropriate time. Anything else?

MR. TARULLO. Mr. Chairman, I think we should say for the record that Brian should draw no negative inferences from the fact that at his very first meeting President Lacker suggests that we should withdraw discretion from the Desk. [Laughter]

CHAIRMAN BERNANKE. Let that be noted. This is the latest we've ever ratified the open market operations, I'm sure, in the history of the Federal Reserve. If there are no other comments, we need to take a few votes. First, by the FOMC to ratify domestic open market operations.

MR. KOHN. So move.

CHAIRMAN BERNANKE. Any objections? [No response] Thank you. Next, by the FOMC to modify the authorization to allow the lending of agency debt. Are there those who

would like to be recorded in opposition to that? No? Without objection. Thank you. The remaining votes are on the program extensions or modifications.

MR. MADIGAN. Mr. Chairman, could I recommend one change to the recommended resolutions? The draft that was circulated indicated that the New York Fed is directed “to suspend operations of” the TSLF options program. I recommend substituting “to suspend auctions under” the TSLF options program. The reason for the change is that there are options outstanding, and I don’t think the intent would be to prevent those options from being exercised.

CHAIRMAN BERNANKE. Noted. Thank you. We need a motion to extend the swap agreements.

MR. KOHN. So move.

CHAIRMAN BERNANKE. Is there anyone who objects? [No response] Okay. The FOMC needs to extend the TSLF until February 1, understanding that the schedule 1 auctions will be suspended and the schedule 2 auctions reduced in size and that the options program will be suspended along the lines that Brian mentioned.

MR. KOHN. So move.

CHAIRMAN BERNANKE. Any objection, concerns? Seeing none, okay. For the Board, we are asked to extend the AMLF, the commercial paper funding facility, the primary dealer credit facility, and the TSLF. This includes the additional restrictions on the AMLF, which Boston will take care of, the reduced offerings under the TSLF, and the tightening of collateral conditions for the primary dealer credit facility. And we will not extend the MMIFF, the money market facility. Brian?

MR. MADIGAN. Just one additional point. On the tightening of the collateral restrictions, it's likely that that will not be implemented immediately but some time in the next several months.

CHAIRMAN BERNANKE. Okay. That will be clear in the statement tomorrow? Yes, okay.

MR. KOHN. So move.

CHAIRMAN BERNANKE. Any objection from the Board? Seeing none. Finally, from the Board, the resolution to scale back the TAF according to the schedule that Brian suggested. Seeing no objection. Thank you very much. Again, we'll provide you with a press release as soon as possible, and it will go out on Thursday, at noon, I believe.

Let us go on now to the staff presentation on the economy. Michael Kiley and Nathan Sheets will make the presentation. Whenever you are ready.

MR. KILEY.⁶ I will be referring to the materials that were just distributed. Recent data suggest that economic activity has continued to contract, but at a more moderate pace than the breathtaking declines registered around the turn of the year.

As shown in the top left panel of your first exhibit, job losses remained sizable through May, albeit smaller than those recorded earlier in the year; despite the moderation in job losses, the unemployment rate jumped another ½ percentage point last month, to 9.4 percent.

In manufacturing, the rate of decline of industrial production (shown in the top right panel) has lessened somewhat in recent months, with the moderation in production cuts broad-based.

We expect that real GDP will rise a bit in the third quarter. While the most significant factor behind the expected near-term pickup is the progress firms—especially automakers—have made on adjusting inventories (a topic I will return to shortly), the stabilization in household demand since late last year also plays an important role. As shown in the middle left panel, real consumer spending has been roughly stable since January. The stabilization in household demand is also apparent in the housing market. As shown in the middle right panel, sales of existing homes

⁶ The materials used by Messrs. Kiley and Sheets are appended to this transcript (appendix 6).

through May, released earlier today, and sales of new homes through April have been roughly flat since late last year.

In contrast to the stabilization in household demand, recent data suggest that business outlays have continued to contract. As shown in the bottom left, shipments of nondefense capital goods excluding aircraft (the red line) continued to trend down through April. And, with new orders well below shipments, we expect further near-term declines. We will receive information on orders and shipments through May tomorrow morning.

As shown to the right, we expect real GDP to fall at an annual rate of 1 percent this quarter, and to rise $\frac{3}{4}$ percent in the third quarter.

The top panel of exhibit 2 lists some of the key factors shaping our medium-term outlook. The outlook for inventories drives much of the contour over the second half of this year. As shown by the blue bars in the middle left panel, firms' efforts to trim bloated inventories in the first half of the year were a sizable drag on GDP. In the second half, the slowing in the rate of liquidation provides an arithmetic boost to GDP growth. Next year, as inventories come into better balance, the advance in GDP is driven primarily by final sales.

Returning to the box at the top, several factors shape our expectation that final demand will begin to improve next year. First, the stabilization in the housing market brings about an end to the drag from residential investment by early next year, and we expect housing construction to turn up modestly thereafter. More broadly, we expect risk premiums on corporate bonds and equities to decline further, which, in conjunction with the declines we have already seen and support from monetary policy, contribute to gains in household wealth and a lower cost of capital.

The middle right panel provides some perspective on the impact of wealth on household outlays: The declines in household wealth associated with falling house and equity prices are estimated to have placed a substantial drag on consumption expenditures both last year and this year. We expect this drag to ebb by a percentage point next year, which, in conjunction with improved access to credit and the effect of stabilization in the labor market on household incomes, helps consumption expenditures to advance $2\frac{3}{4}$ percent in 2010.

The bottom left panel presents the familiar accelerator mechanism, where business fixed investment as a share of output (shown in red) tends to track, with a lag, the growth rate of output (shown in black). We expect the deceleration in output over the past year to damp business investment through early next year; thereafter, equipment and software spending is expected to pick up. However, spending on nonresidential structures is likely to continue to decline for some time, reflecting high vacancy rates, falling prices of commercial real estate, and persistently tight credit conditions in that sector.

Putting the pieces together, we project that real GDP will advance a bit more than 1 percent at an annual rate over the second half of this year and about 3 percent next year, both higher than in the April Greenbook. The somewhat faster pace of growth relative to April reflects the positive effects of lower risk premiums on corporate debt and equity, a lower exchange value of the dollar, and a modestly better outlook for foreign activity, which together outweigh the heightened drag from higher mortgage rates and oil prices.

Your next exhibit summarizes the inflation outlook. The readings on core PCE price inflation in March and April averaged $\frac{1}{4}$ percent; these gains were boosted by the response of producers to the increase in federal excise taxes on tobacco. Given the news in the May CPI report, we estimate that core PCE prices advanced a more moderate 0.1 percent in May.

Turning to the panel at the right, we project the unemployment rate to rise to 10 percent by the end of this year and to edge down a bit in the second half of 2010. We have also boosted our estimate of the NAIRU a touch, to 5 percent, reflecting the accumulation of evidence that the high rates of permanent job losses in this recession will raise the level of frictional unemployment for a time.

Our energy price forecast is shown in the middle left panel. With the price of oil projected to be about \$15 a barrel higher, on average, over the projection period, we anticipate somewhat more acceleration in energy prices through the middle of next year than in the previous projection.

Finally, we expect core import price inflation (shown at the middle right) to pick up over the second half of this year, reflecting, in part, the run up in non-oil commodity prices and the decline in the exchange value of the dollar.

As shown by the green line in the bottom panel, we expect overall PCE inflation to slow from 1.4 percent this year to 1.1 percent in 2010. Core inflation is projected to slow a bit more. The projected deceleration in core inflation reflects the substantial drag induced by economic slack.

Given the central role of economic slack in our projection, the next exhibit discusses uncertainty regarding our estimates of resource utilization.

The upper two panels focus on the differences in the degree of slack signaled by our current estimates of the output gap and the unemployment gap—that is, the deviation of the unemployment rate from the staff estimate of the NAIRU. The panel to the left plots the output gap (the black line) and the unemployment gap (the red line, plotted on an inverted scale). As highlighted to the right, the output and unemployment gaps typically provide similar signals; this similarity is largely by construction, as we use information from developments in both product and labor markets to jointly inform our estimates of potential GDP and the NAIRU. However,

a sizable discrepancy has opened up during this recession—with the unemployment gap suggesting an even greater degree of slack than suggested by the output gap.

In the Greenbook, we highlighted several possible explanations for the discrepancy. First, the GDP data, as currently published, may understate the contraction in real activity; indeed, the data on Gross Domestic Income, which in principle estimate overall economic activity as does GDP, have been significantly weaker than GDP since 2007. Second, labor force participation may currently be boosted to an unusual degree by the Extended Unemployment Compensation (or EUC) program, by the declines in wealth and their effect on the labor supply of near-retirees or other workers, or by other factors, such as an unusual concentration of job losses among individuals with strong labor force attachment; such unusual boosts to participation would have a large influence on the unemployment gap but not much effect on the estimated GDP gap. Finally, we may currently have underestimated the size of shifts in the NAIRU or other elements of potential, possibly contributing to mismeasurement of slack.

Indeed, we often change our estimate of output gaps with hindsight. The panel at the middle left shows how our current estimates of the output gap (the black line) differ from the initial estimates we made over the history of the last 20 years (the green line); such differences may reflect revisions to data, changes in the staff's methodology, and the fact that underlying trends are more easily detected looking backward than looking forward. Nonetheless, the revisions over the past two decades are not especially large: The root-mean-squared error from the initial to current estimate is less than one percentage point over this period. This size of revision is much smaller than that found in some academic studies that focused on the 1970s or early 1980s.

Another way to assess uncertainty regarding resource utilization is to compare estimates of slack derived from different methods. As highlighted in the box at the middle right, different methods will imply different estimates of potential GDP. I consider estimates from three methods. The first is the staff estimate, which is loosely based on a growth accounting approach along with a number of underlying models (related to productivity dynamics, Okun's law, and the Phillips curve, for example). The second is a trend-cycle decomposition of GDP using a simple Phillips curve in which inflation is a function of the output gap, a model that has been used in many academic studies. The third is derived from a dynamic stochastic general equilibrium (or DSGE) model developed at the Board. This model, called EDO for Estimated, Dynamic, Optimization-based model, consists of a set of equations for the spending, production, and wage and price decisions of households and firms that are derived from utility- and profit-maximization under model-consistent expectations.

The bottom panel presents the range of estimates generated by these methods, the 90 percent confidence interval around this range, and the staff's estimate of the output gap. Three points are apparent. First, uncertainty is significant: the 90 percent confidence interval for the second quarter of this year spans from about -2 percent of

potential GDP to about -8 percent of potential GDP. Second, the staff's estimate of the output gap is in the lower half of the confidence interval, but it is not the most negative estimate; the estimate from the DSGE model is more negative, at a bit below -7 percent. Finally, the entire confidence interval for the output gap is below zero, by the largest margin seen over the past two decades. In summary, it seems highly likely that the economy currently is operating with considerable slack.

Your final exhibit focuses on two other risks to the inflation outlook. As discussed in the top left box and shown in the upper right, long-run inflation expectations have been reasonably well anchored for some time. In our projection, this prevents a sharper deceleration in inflation. However, an unmooring of expectations is a risk: For example, expectations could shift down markedly in response to the weak economy and decelerating wage gains; alternatively, expectations could ramp up, perhaps in response to our expanding balance sheet.

Another important risk surrounding our inflation projection relates to the links between resource utilization and inflation, discussed in the middle panels. Inflation appears less sensitive to resource utilization than in the past; for example, the middle right panel presents estimates of the slope of a simple Phillips curve using rolling 20-year samples; these show a lower sensitivity of inflation to utilization in the most recent data. This apparent reduction in sensitivity is one factor that contributed to our projection that inflation will decelerate by less than it did during earlier periods of substantial slack. But it is possible that the recent data are leading us astray, because reliable identification of the slope of the Phillips curve may require large movements in utilization. The post-2003 estimates plotted in the chart are based on sample periods that exclude the early 1980s, and they may not be a reliable guide now that we have reentered a period of high unemployment. If the effect of utilization on inflation were similar to that apparent during the early 1980s disinflation, we could see deflation.

The bottom panels illustrate these risks using two alternative simulations from the Greenbook. In the first, we assume that long-run inflation expectations (corresponding to the PCE price index) rise 1 percentage point, to 3 percent, by early next year. This increase becomes partially self-fulfilling, and core PCE inflation averages 1½ percent in 2010 and then climbs steadily, reaching 2½ percent by 2013. Given the stronger price outlook, the federal funds rate lifts off from zero a year earlier than in the baseline.

The second simulation (labeled deflation) assumes an effect of slack on inflation and an accelerationist structure to the Phillips curve more consistent with models estimated over sample periods including the 1970s and early 1980s. As a result, core prices are flat or falling through 2011, and only rising slowly thereafter.

MR. SHEETS. Although a wide array of asset prices plays a role in our forecast, the dollar holds a special place in the hearts of those of us in the International Finance Division. As shown in the top left panel, the broad real dollar has moved down

significantly since its peak in March. As displayed in the middle panel, the dollar has posted large declines in recent months against many currencies of the advanced foreign economies, or AFEs. The dollar has also depreciated significantly against emerging market, or EME, currencies (shown on the right), which has prompted a number of these countries, including Brazil, Russia, and several in emerging Asia, to intervene in foreign exchange markets to temper the pace of their currency's rebound. Notably, however, the dollar has essentially moved sideways since the U.S. payrolls release on June 5, as the less-grim-than-expected report pushed up the path of short-term U.S. interest rates relative to those abroad.

Although the dollar has declined substantially over the past few months, it still has not reversed the sharp rise posted in the second half of 2008 and early this year, as financial market participants sought refuge in U.S. Treasuries. We believe that the primary reason for the dollar's recent depreciation is an unwinding of this flight to safety, partly predicated on an improving outlook for the global economy. The marked rebound in some previously distressed EME currencies is consistent with this hypothesis. In addition, as shown in the middle left, the spreads on BBB corporate bonds have declined, most steeply in the United States, but elsewhere as well. And global equity prices (shown on the middle right), despite retreating some in recent sessions, have rebounded significantly on balance in recent months.

In addition to an increase in risk appetite, some currencies—such as the Canadian and Australian dollars and the Brazilian *real*—have been supported by a rise in commodity prices. The spot price of WTI oil (the black line in the bottom left panel) has jumped to nearly \$70 per barrel, up \$15 per barrel since your last meeting, and nonfuel commodity prices have increased about 10 percent on average. These rises seem to signal an incipient increase in the demand for commodities, in light of recent—and expected future—improvements in global economic conditions. Notably, the International Energy Agency and the U.S. Department of Energy have revised up their forecasts of global oil demand. And, as shown on the bottom right, the Baltic Dry Index—a measure of bulk shipping rates—has recently moved up, in line with a rebound in Chinese purchases of iron ore and other commodities.

Some market commentary has also linked the dollar's recent decline to concerns about the U.S. fiscal outlook and the extent of Treasury issuance. As seen in the first panel of your next exhibit, U.S. Treasury yields have recently moved up more than sovereign yields abroad, but we see this difference as largely reflecting an unwinding of flight-to-safety flows. Moreover, although sovereign CDS premiums (the top right panel) have increased some of late, they have not risen disproportionately in the United States relative to other countries. Indeed, the dollar continued to depreciate against the pound even after the United Kingdom was put on a credit watch by S&P in mid-May. Other observers have attributed the dollar's decline to anxieties about future U.S. inflation, but it is difficult to square this view with various measures of inflation expectations, which seem reasonably well anchored—as Michael Kiley has shown.

Your next panels focus on the U.S. external sector. As shown in the table, we see net exports adding about 1 percentage point to U.S. economic growth in the current quarter, with the decline in imports continuing to outpace that of exports. Thereafter, net exports should subtract about $\frac{1}{2}$ percentage point from growth in the second half of this year and a $\frac{1}{4}$ percentage point in 2010, as the recovery of imports is seen to be somewhat stronger than that of exports.

The relative strength of imports reflects several factors. First, notwithstanding the dollar's recent depreciation, it is still up about 10 percent over the past year. In light of the long lags in our trade equations, the exchange rate is likely to be a net source of stimulus for imports and drag on exports for some time. In addition, as shown on the right, with U.S. and foreign GDP growth expected to proceed at roughly comparable paces through the forecast period, the persistently higher income elasticity of U.S. imports—the so-called Houthakker-Magee asymmetry—should also boost import growth relative to export growth.

As seen in the bottom left panel, the current account deficit in the first quarter narrowed to less than 3 percent of GDP, the lowest reading in a decade. However, our forecast calls for the deficit to widen again, to about 4 percent of GDP by the end of next year. In addition to the relative strength of real imports, which I just discussed, the run-up in oil prices plays a key role in this projection. As shown on the right panel, the oil import balance—which had improved by \$300 billion in recent quarters—is poised to deteriorate.

Your next exhibit examines the outlook for foreign activity. Aggregate GDP growth abroad (line 1 of the table) contracted at an $8\frac{1}{2}$ percent annual rate in the first quarter, the sharpest decline on record. But recent data have signaled that the pace of contraction slowed significantly in the second quarter and, indeed, have prompted us to mark up our forecast. We now expect foreign growth to rise to roughly $1\frac{3}{4}$ percent during the second half of this year and to around 3 percent in 2010. The recovery is expected to be rather lackluster, as households and firms around the globe remain conservative in their spending decisions and the flow of credit remains anemic as financial institutions repair their balance sheets.

In the advanced foreign economies, recent survey data, such as purchasing managers' indexes, are well off their recent lows and are now close to levels that signal a stabilization of activity. In addition, a few pieces of so-called hard data for these countries, including retail sales (the right panel) and industrial production (not shown), seem to be flattening out.

Consistent with these admittedly fledgling signs of stabilization, our forecast for the AFEs (line 3 in the table) calls for economic growth to rise slowly from the first quarter's $7\frac{1}{2}$ percent plunge to roughly zero in the second half of this year and to nearly 2 percent next year. This forecast is a few tenths higher than in April, in line with recent data and the improvement in financial conditions. The trajectory of our forecast is also helped by a swing in the contribution from inventories in some

countries, as firms have quickly drawn down their stocks in recent quarters. Monetary policy is another supportive factor. As you know, central banks in these economies have cut rates to very low levels and are implementing unconventional policy measures in an effort to stimulate economic activity.

Fiscal stimulus—the bottom left panel—should also bolster activity this year. But the fiscal boost falls off markedly next year in the AFEs, highlighting a risk that their recoveries may stall if a rebound in private demand is not well entrenched. Moreover, labor market conditions in these economies are likely to worsen for a while. The middle panel shows projections of unemployment rates for the foreign economies from a simple model that regresses the unemployment rate on GDP growth and lags of both variables. This framework indicates that unemployment rates abroad are likely to continue rising until well into 2010 or even later, and European policymakers themselves have expressed deep concerns about the near-term trajectory of the labor market. Consistent with these observations, our forecast sees activity in the advanced foreign economies remaining quite soft, with their output gaps (the right panel) only stabilizing next year and generally lagging the U.S. recovery.

As shown in the table at the top of your next exhibit, GDP in the emerging market economies (line 1) plunged at a 9¾ percent rate in the first quarter, including a 21½ percent drop in Mexico (line 4). GDP in these economies is projected to decline slightly in the current quarter and then gradually accelerate, with growth reaching 4½ percent in 2010. This recovery is supported by a projected further recovery in capital flows, continued stimulus from macroeconomic policies, and strengthening global demand. The Mexican economy again contracted sharply in the second quarter, depressed by the flu outbreak, but we see those effects as being quickly reversed.

The EMEs are showing some marked signs of improvement, especially China. As seen in the middle left panel, China's PMI has moved up to a reading that our empirical work indicates is consistent with GDP growth of above 5 percent. As for harder data, the 12-month growth of Chinese retail sales has continued to hold up well, and that of fixed investment has risen to almost 40 percent, fueled by fiscal stimulus and rapid bank lending. Also, as shown on the right, electricity production and imports—two indicators that had shown marked weakness—have rebounded vigorously of late. All told, our sense is that the Chinese economy is in the midst of a moderate recovery, but the extent to which China will become an engine of growth for the region, or for the global economy more generally, remains to be seen.

In other emerging market economies, signs of stabilization are also becoming more apparent. As in China, PMIs (the bottom left) have bounced back from their lows in a number of emerging Asian and Latin American economies. Industrial production (the middle panel) has decreased at a slower pace or even moved back up, and retail sales (not shown) have righted themselves. This strengthening performance

appears to stem in part from an improvement in exports (the right panel), which have bottomed out or rebounded in many EMEs.

Brian Madigan will conclude our presentation.

MR. MADIGAN.⁷ I will be referring to the separate package labeled “Material for Briefing on FOMC Participants’ Economic Projections.”

Exhibit 1 tabulates the central tendencies and ranges of your latest projections. Corresponding information about your April projections is indicated in italics, and June Greenbook projections are included as memo items.

As shown in the upper left portion of the table, your forecasts for real GDP growth in 2009 have a central tendency of -1.5 to -1 percent. That is an upward shift of about $\frac{1}{4}$ to $\frac{1}{2}$ percentage point from April, reflecting increases to your projections for both halves of this year. You indicated that the upward revision was in response to the better tone of the data releases and improvements in financial conditions over the intermeeting period. Your growth forecasts for 2010 and 2011 are similar to those you provided in April.

Even though you project higher real GDP growth over the near term, all of you raised your forecasts of the unemployment rate. The central tendency in the fourth quarter of 2009 is now 9.8 to 10.1 percent, about $\frac{1}{2}$ percentage point above your April projections. You still expect that the unemployment rate will trend down during 2010 and 2011, but the levels remain about $\frac{1}{2}$ percentage point above your April projections. Many of you cited recent higher-than-expected unemployment data as the reason for the revisions. Moreover, each of you indicated that the unemployment rate in the fourth quarter of 2011 is likely to be well above your estimate of the long-run equilibrium unemployment rate.

As shown in the lower half of the table, recent information has led you to raise your forecasts for headline and core inflation from those in April. The central tendency of your projections for headline PCE inflation in 2009 is 1.0 to 1.4 percent, about $\frac{1}{2}$ percentage point above that of April, and you made small upward revisions in 2010 and 2011. Many of you noted that these upward revisions reflect the influence of higher-than-expected core inflation data and higher energy prices, and some pointed to higher inflation expectations. Most of you still project that inflation will stay around or below your view of “mandate-consistent” inflation through 2011, but your expectations for inflation continue to span a wide range. Some see inflation slowing through 2011 in response to persistently high economic slack, while others see inflation rising above “mandate-consistent” inflation because of the influence of the rapid expansion of the Federal Reserve’s balance sheet on inflation expectations.

Over the near term, your views on the outlook are broadly similar to those of the staff. Greenbook projections for real GDP growth, unemployment, and inflation for

⁷ The materials used by Mr. Madigan are appended to this transcript (appendix 7).

2009 are within the central tendencies of your projections. However, by 2011 noticeable differences are evident. The Greenbook's real GDP growth forecast for that year is above the central tendency of your projections, while the staff forecasts for the unemployment rate and core inflation are below the central tendencies. Several of you again noted explicitly that you do not share the staff's view of inflation dynamics.

That divergence in views helps explain why more than half of you anticipate that it will be necessary to begin moving the fed funds rate up appreciably earlier than envisioned by the Greenbook, which assumes that the federal funds rate will remain close to the zero bound through 2011.

As shown by the left panels of exhibit 2, your views on the degree of uncertainty surrounding your projections have not changed appreciably since April. Almost all of you see greater-than-usual uncertainty regarding your projections of both economic growth and inflation, reflecting the unusual nature of the shocks that triggered the current recession and our limited experience with nontraditional policy tools. However, as shown in the right-hand panels, more of you now judge that the risks to growth and inflation are roughly balanced. For economic growth, many of you see the recent economic and financial developments as having reduced downside risks. Fewer of you now judge that inflation risks are skewed to the downside, and a large majority of you see inflation risks as balanced overall.

Mr. Chairman, that concludes our presentation. But while I have the floor, could I note that I misspoke earlier when I said that the timing of the PDCF haircuts would be announced in the press release on Thursday. Those haircuts aren't published, so it wouldn't make sense to put them in the press release. But the Desk will inform the dealers at the appropriate time.

CHAIRMAN BERNANKE. Thank you. Thank you for the presentation. Questions for our colleagues? President Fisher.

MR. FISHER. I just have some questions of Nathan. You mentioned the Baltic Dry Index in the context of Chinese iron ore imports. Chinese iron ore imports are far exceeding steel production, as you know. So my question is: How sustainable, in your opinion, is this recovery?

MR. SHEETS. We have reason to believe that these Chinese purchases are playing a very special role here. What is China doing with all of these commodities that they're purchasing? I think the answer has three parts. First, some of these commodities are actually

being consumed by Chinese firms in association with the fiscal stimulus that's being put in place. Second, some are being used to replenish inventory levels. In the fall, when the Chinese and global economy hit something of a wall, many firms just backed away entirely from commodity purchases, and that is one of the reasons why the bottom fell out of the commodity market. So those inventory levels are low, and they're being brought back to normal levels. Third, I think that there is some strategic purchasing going on in the Chinese economy right now. Commodities are cheap, and they're pretty confident that at some point they're going to need to use them, so they're buying things and stockpiling them.

My sense is that, of those three causes, the first one is indicative of early stages of a recovery in the Chinese economy. I think that's probably sustainable. These inventory-based explanations are less sustainable, so it wouldn't surprise me if, over time, Chinese purchases flattened out, or even came back from where they are today. Now, if that happens in the context of a broader global recovery, less demand for basic materials from China would be offset by increased demand from other countries. But I think there is a risk that the commodity markets have gotten ahead of themselves and that the Chinese will stop buying at this furious pace, and we'll see a little bit of unwinding of the increases in commodity prices that we've seen over the last few months.

CHAIRMAN BERNANKE. Thank you. President Lockhart.

MR. LOCKHART. Thank you, Mr. Chairman. The PCE energy prices seem to be coming off in the forecast into 2010, while the oil commodity price continues to rise slightly, suggesting it's non-oil energy. Can you explain what the thinking is there?

MR. KILEY. I think that's mainly just looking at rates of changes versus levels. It's true that the level in 2010 is picking up, but the rate of change is decelerating, because we've seen a

big run-up right now in oil prices, and that will be passed through over the second half of this year.

CHAIRMAN BERNANKE. President Evans.

MR. EVANS. Thank you, Mr. Chairman. Brian, I just wanted to ask you a question. Taking note of the extremely large range on the inflation forecast for core PCE, is this outside of historical experience? I don't mean the history of our projections—we haven't been doing it that long. But have we seen this kind of range among professional forecasters, even taking note of the fact that they might want to market their forecasts in a particular way because they've got different jobs than we do? It seems very large, and, frankly, it challenges your ability to listen to all of the commentary around the room in an even-keeled way, it seems to me. Well, that's my reaction—speaking of shipping. [Laughter]

MR. MADIGAN. I don't know the answer to your question, President Evans, but it is, as I noted in my remarks, fairly striking.

MR. STOCKTON. Just relative to the Greenbook stochastic simulations or the confidence intervals, even that wide range in 2011 is within the 70 percent confidence interval of the forecast. So it's a sad statement on forecasting.

CHAIRMAN BERNANKE. FOMC are not sheep. [Laughter] President Plosser.

MR. PLOSSER. Thank you, Mr. Chairman. I have a question. I appreciate the discussion about measures of slack and output gaps, and I was particularly struck by the measures that were produced by the EDO model. In the Bluebook, your description of the construction of the output gap is not the way I normally think of it—it looks like some long-run trend or steady-state model. Most of these stochastic, general equilibrium models think about equilibrium output being at a point in time, and then you get shocked away from that. The

difference between what might be produced by a sticky price model versus a flexible price model gives you some measure of the difference between what's feasible and what you actually get. But you've defined the output gap in a much different way, using what looks like some concept of steady state, and I was a little puzzled by that choice. Of course, in your discussion you highlighted the fact that that actually led to the EDO model having a very large output gap rather than a somewhat smaller one. Most of these DSGE models lead to much more volatile measures of what you might think of as equilibrium or potential output at a point in time. If you sort of rethink, then, the range of where potential output might be in terms of what different models give you, I guess I wouldn't have selected that subset, I would have selected a little different subset.

MR. KILEY. Right. A lot of that is jargon, terminology. We were trying to create some definitions that could be consistently applied across many models. So certainly in our model there's a natural rate of output or an equilibrium rate of output that would be consistent with economic efficiency according to that model or with the absence of wage and price rigidities according to that model. Those two wouldn't necessarily be the same. But one could have many different definitions of the natural rate of output or the equilibrium rate of output.

MR. PLOSSER. Right. It depends on your model.

MR. KILEY. We've published papers on using that model and constructing those measures. Those measures depend upon a set of assumptions regarding certain elements in the structure of the economy that many models don't even make assumptions about. So we couldn't compare that concept with a time-series model, like the trend-cycle decomposition of GDP. Nor could we compare that necessarily with the staff's estimate; in putting together potential output, the staff takes a long-run growth accounting view and doesn't think about what would happen if, for example, it removed all price and wage rigidities for the economy.

We wanted to place all of our models on an equal footing, so we took a very standard definition of potential output for this exercise for the EDO model—the Beveridge–Nelson definition. The model has a representation of the economy that has stochastic trends and unit roots and all of these things in it, and we can crank through all of that machinery and generate a long-run forecast for output, just as you could in a time-series model, or in the FRB/US model, or in basically any model. We considered that to be a really good thing, because we can actually use the same idea across models—we’re not mixing apples and oranges.

When we do that in this model, there’s a lot of slack right now. Other models of a similar type could give you a different answer—it could be that the natural rate of output gives you a very different answer. So you have to think about why you want to look at all of these concepts, and think about what you’re comparing across different models. This seemed like the simplest way to compare across models. In response to a different question, you might want to use a different concept.

MR. PLOSSER. I guess I don’t disagree with anything you’ve just said, except that I think it’s important to note that the concept of potential output is not model-free. Therefore, we have to think hard about what this construct looks like. At some level, you’re making some assumptions about what that concept means, and that concept can differ quite a bit across models that one might choose from. That’s what makes all of this hard in sort of figuring out what the interpretation might be.

MR. KILEY. That’s absolutely right, and I just want to clarify one thing. The definition of “potential” here is a statistical definition that’s consistent with the model. We didn’t say, “Okay, we’re going to use this statistical method for the output gap,” and then put it in the model, and a bunch of Phillips curves, or a bunch of other things. The model is completely

independent of that statistical machinery, and wages and prices and everything are being driven by all of the things that are appropriate in a dynamic stochastic general equilibrium model. It's trying to match the data, so when you generate a statistical measure of the output gap from this model, that statistical measure will forecast low inflation, because statistically that's what it thinks happens in the data. That theoretical concept plays no role in the model—it's a statistical concept.

CHAIRMAN BERNANKE. President Lacker.

MR. LACKER. The version of the output gap that President Plosser was referring to, as opposed to this other statistical one—that's the one that governs inflation dynamics in that model, isn't it?

MR. KILEY. No. In a simple three-equation model that's true. But once you have sticky prices and sticky wages, monopoly power, other sources of distorting shocks, there is no simple relationship between what would happen in the absence of wage and price rigidities and what would happen to inflation. You could write down a model—a very simple model—where that would be true. But it need not be the case.

MR. LACKER. But that one is related, somehow, in a complicated way, and the one you display is not, right?

MR. KILEY. We forecast inflation with the model I've displayed. It forecasts very low inflation, because the output gap is so big. That's not a behavioral relationship, that's a statistical regularity.

MR. LACKER. Well, wait. I thought you said the model stood apart. What does this gap measured from EDO have to do with inflation dynamics in the model?

MR. KILEY. In the model, it doesn't. But the model is trying to capture the data. You can simulate the model a million times, generate data, and then regress anything against anything and you find reduced-form relationships. The reduced-form relationships, consistent with the model and the data, are that output gaps predict low inflation. And that's a reduced-form characteristic of the model that comes from its structure. It's a pretty big and complicated model, as many are these days. But, because it tries to capture the data, and because it looks like that's a regularity in the data, it's generating that prediction.

CHAIRMAN BERNANKE. Other questions? [No response] All right. Thank you for a very productive discussion. Dinner tonight is purely social at the British Embassy at 7:30. We'll begin tomorrow at 9:00 a.m. with the go-round.

[Meeting recessed]

June 24, 2009—Morning Session

CHAIRMAN BERNANKE. Good morning, everybody. I think we have a report on some data from Dave Stockton.

MR. STOCKTON.⁸ Yes. First, Mr. Chairman, I think yesterday I broke my own record. I said one thing at the meeting, and it was wrong. [Laughter] I would like to correct that. In response to President Evans's observation about the wide dispersion of the inflation forecast in 2011, I think I said that the range of those forecasts was within the 70 percent confidence interval that we generate using stochastic stimulations. That, in fact, isn't right. The range for total PCE prices is just outside the 70 percent confidence interval, and the range for core PCE prices is even further outside the 70 percent confidence interval and, in fact, reaches the 90 percent confidence interval. So there is an unusually wide range of forecasts out there.

As for the data, we received the advanced durables this morning—I think you should have the table in front of you—and it was a stronger-than-expected report. Shipments of nondefense capital goods excluding aircraft—the bolded figures—rose 0.3 percent in May; we had actually been expecting shipments to decline about 1½ percent. And orders rose more strongly, 4.8 percent, which is a pretty solid increase, pointing to a little bit less weakness going forward in capital spending than we'd been expecting. Now, it is still the case that orders remain well below shipments and that overall equipment spending is still contracting, but I think we'd view these data as at least being supportive of our view that the pace of that contraction in equipment spending is lessening. We're going to get new home sales data later this morning. We don't have those yet.

CHAIRMAN BERNANKE. Thank you. We'll begin our economic go-round with President Plosser.

⁸ The materials used by Mr. Stockton are appended to this transcript (appendix 8).

MR. PLOSSER. Thank you, Mr. Chairman. Good morning. Business conditions in the Third District remained relatively soft in May and early June. Nevertheless, the steepness of the decline appears to have eased rather dramatically, and the tone from our business contacts has noticeably improved. While our contacts don't expect a strong upturn in business activity, they clearly see signs of stabilization in the near term.

The most positive indicator from our Business Outlook Survey, which was released last week, is manufacturing, and that index said that general activity improved from a minus 22.6 in May to a minus 2.2 percent in June—a 20-point swing, which is rather significant as these standards go. This indicates essentially flat activity in the District now. This is considerably stronger than some of the national industrial production numbers, but consistent with some of the other regional manufacturing surveys. Our survey has a fairly long history—a little longer than Richmond's, I believe, but I'm not sure. [Laughter] And a movement above zero in this index likely marks the recession's trough, based on past relationships between this index and NBER recession dates. The future activity index moved up quite sharply in June to levels we haven't seen in several years.

The most negative factor in the District was the unemployment report. The unemployment rate in our three states rose another 0.4 percentage point and now stands at 8.4 percent. Payrolls have continued to fall, and, even in our surveys, the employment picture does not look terribly bright.

Based primarily on the expected labor market data, I've revised downward slightly my near-term forecast for 2009 and upped my unemployment rate forecast compared with April. But I have to confess that my forecast in April was on the outlier side of positive compared with many others. The basic shape of my forecast, however, remains very similar: A return to

positive economic growth in the second half of this year and recovery gaining traction in 2010, picking up to about 3 percent. This is actually similar to the Greenbook's forecast, which has been revised up since our last meeting, so maybe we are converging here at some point.

However, our inflation forecast continued to differ. I see less deflationary pressures than the Greenbook baseline, and, even with its upward revision to inflation, I see greater risk of higher inflation not in the near term, but in the outyears.

I continue to be skeptical of putting too much weight on output gaps as predictors of inflation. My reading of the literature suggests that gaps are difficult to measure with any precision, and this may be one reason that gap measures get little weight in empirical estimations of New Keynesian Phillips curve models. From the staff discussion yesterday on the range of gap measures, it appears we may have very different perceptions about how to go about constructing the appropriate measure of potential output. Nevertheless, I think it was interesting. In fact, the estimates reported yesterday showed a very wide range of views of what the output gap may be—from something like minus 7 or 8 percent to minus 2 or 3 percent. We view that as being a range of uncertainty about the magnitude of the gap. In a simple Phillips curve model, that may imply a difference of between 200 and 300 basis points in what a Taylor rule might imply about the fed funds rate. That's a pretty large difference in policy stance, so that may suggest very different policies.

If we are closer to the smaller measure of the output gap than to the larger measure, it also means that we may have to raise rates sooner than we might think. In Philadelphia's own DSGE forecasting model, we actually get considerably higher inflation pressures going forward than the Greenbook baseline shows, particularly if the fed funds rate stays at zero through 2012. Given the difficulties in estimating and forecasting inflation, I do think we need to consider

alternative forecasts seriously. With the aggressive monetary policy actions we have taken, I think this means looking at the possibility that our own inflation forecast possesses clear risks to the upside and preparing ourselves and the public for the possibility that we may have to act sooner rather than later. In addition, the size of our balance sheet might complicate our ability to respond as rapidly as necessary to curtail inflation pressures. And while inflation expectations have so far remained anchored, I think we have to be cognizant of the fact that this might change if agents become convinced that projected fiscal deficits will be monetized or if we fail to act in a timely manner. For these reasons, I think we should be very cautious of being overly confident that we can leave monetary policy accommodation in place as long as the Greenbook suggests without some very bad consequences on the inflation front.

Needless to say, with that perspective in mind, the fed funds rate path embedded in my forecast is considerably steeper than the Greenbook's, which holds rates at zero through 2011. I believe we will need to begin raising rates by early next year at the latest and throughout the forecast horizon, to at least 3½ or 4 percent by the fourth quarter of 2011. I don't believe we can keep the fed funds rate at zero and expect to achieve anything close to our inflation objective or maintain our credibility in achieving that objective over the longer run. We can say what we please, but it cannot substitute for action. Our assessment of the output gap will be central to how the Committee thinks about the appropriate time to change course and begin to tighten, and we may have to do so in a fairly rapid way. If we dramatically overestimate the size and persistence of the output gap and wait, we will be too late to stem significant inflation risk.

I think we also will need to monitor carefully quantities of various kinds, whether it be bank lending or other measures. In the past, our operating procedures have constrained reserves deliberately through our control of the fed funds rate and through limiting reserves to the

marketplace. Now those reserves are already out there, in the form of excess reserves in the banking system. When banks decide it's time to start lending again, those reserves can move from excess reserves into bank lending very quickly, and they will not need to be supplied by us as in the old operating regime. Therefore, I think this transition might be very quick—I don't mean days, but certainly over a series of months. Depending on what we view as the appropriate equilibrium interest rate, our setting for the fed funds rate or the IOER may have to move up quite rapidly, because the opportunity cost of funds in terms of bank lending may move up fairly rapidly in the process.

I think we're going to face some severe challenges at the turning point when we have to make the decision to move. It may come sooner than we think, and it may have to be more rapid than we think. I think we have to prepare ourselves for that possibility, and through our communications, prepare the public for that eventuality as well. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Lockhart.

MR. LOCKHART. Thank you, Mr. Chairman. I want to add my thanks to those of President Evans for the improved amplification. I could hear President Plosser here very well.
[Laughter]

In the last two weeks, because of the possible gap between reports of increasingly optimistic sentiment and underlying reality, the Atlanta Bank took great care to collect a lot of input from directors' business and financial contacts. Reports from the business community clearly indicate greater stability. That said, the tone of these reports suggests an economy that is still exceptionally fragile. There is not much optimism among my contacts for a strong recovery. Business capital spending is being indefinitely postponed, and there is little appetite for hiring, even for seasonal or temporary positions. One Atlanta director, a partner in a top management

consulting firm, stated that they are doing very little growth work and that most of their large corporate strategy assignments relate to positioning for subdued business conditions for the next five years. In the financial sector, banks are still very cautious in credit extension. C&I loan demand remains quite soft, and mortgage demand fell sharply when mortgage rates rose above 5 percent.

The outlook I submitted is little changed from late April. I expect this will be an exceptionally slow recovery. I find the alternative simulations presented in this meeting's Greenbook to be quite pertinent. My outlook has elements of the scenarios for both the slower recovery and labor market damage. In my view, a slow restoration of financial markets will limit credit availability well into 2010, and the rebuilding of wealth is likely to be spread over several years. These influences will inhibit the usual forces of recovery. The significant reorganization of the economy could keep the unemployment rate elevated for years into the recovery.

As regards prices, the recent rise in oil and some other commodity prices could raise inflation statistics this summer, but we've also seen downward price pressure elsewhere in the data. Overall, I'm in the camp that is not overly concerned about inflation for the medium term. I continue to think the prospect for deflation is roughly balanced against the likelihood that inflation will accelerate above a rate consistent with price stability. But even if I am somewhat sanguine about inflation, I acknowledge a high level of uncertainty about the inflation outlook. I also note that concern about inflation expressed anecdotally on the part of my business contacts is clearly rising; this concern seems to be connected to apprehension about how the Fed will manage its balance sheet going forward. As I see it, the context of our policy discussion involves the potential of a widening separation in public and market sentiment between the expectation of policy reversal and exit and a more uncertain and fragile underlying reality. I am

concerned that too much talk of exit could get ahead of reality. As several said yesterday, this presents a particularly delicate communication challenge coming out of this meeting. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Pianalto.

MS. PIANALTO. Thank you, Mr. Chairman. The reports from my District have revealed lingering concerns about how the economy will evolve over the rest of this year. Most of my contacts agree that their worst fears for the economy seem less likely to be realized now, but they are still far from optimistic. Expectations for the remainder of the year varied from further reduction in activity levels to a very moderate resumption in economic growth. Reports of hiring are still rare, and several contacts from larger companies suggest that they are working on another round of layoffs. From my District vantage point, it still looks like a very gradual recovery process. The inflation picture is mixed. I am hearing a growing number of contacts expressing fears of inflation driven by rising commodity prices and ballooning fiscal deficits, but I am also hearing widespread reports of downward pressures on wages and benefits.

Synthesizing these reports and the incoming data into an outlook continues to be challenging. I have revised up slightly my output forecast from the April meeting, as business fixed investment, although still a considerable drag on growth, declines less steeply than in my previous outlook. While business spending on equipment is likely to pick up in the second half of the year, spending on structures, as was mentioned yesterday, will probably take longer to recover. Some recent favorable readings from the housing indicators have also attenuated the near-term decline in residential investment in my outlook and have raised the prospect for a turnaround in housing in the second half of the year. My forecast still has the unemployment rate peaking at just over 10 percent in early 2010. The continued rapid rise in unemployment

certainly remains an important drag on the economy as new jobs are hard to find for many of the workers who were laid off.

I revised up my inflation forecast for 2009, but I left my longer-term inflation projection on a gradual path towards 2 percent. As we discussed yesterday, the latest Survey of Professional Forecasters has a broader variance around the longer-term inflation trend, but the median inflation projection is largely unchanged. And, as we said yesterday, we have seen an unusually wide range of inflation projections in this round of the Committee's submissions.

We know that the liquidity problems in the TIPS market have made that a more difficult indicator to use to deem where inflation expectations are. We have done some work at the Cleveland Fed using a different method of looking at the TIPS data, and those results suggest that inflation expectations have returned to pre-crisis levels. Apparently, these results have been confirmed by the staff of the San Francisco Fed, who used a different methodology but came to the same conclusion. Consequently, although inflation expectations are still volatile, I do think that it is reasonable to characterize them as anchored.

In my view, the risks to the forecast remain to the downside for output, because the improvements in the real economy that we are seeing remain nascent and, I think, fragile. However, I did revise my views of the risks around the inflation forecast to "balanced"—they are large but symmetric.

This remains a very challenging period to evaluate the incoming data, and even a smaller gap doesn't mitigate the fact that the economy is still contracting in the current quarter, and most projections show limited growth for a considerable period. Despite my forecast for higher inflation compared with the Greenbook, my overall outlook leaves the economy a fair distance from needing a tighter monetary policy. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Evans.

MR. EVANS. Thank you, Mr. Chairman. Over the past several weeks, my key concern about the outlook has been whether the improvements in the forecast would be sustained. Were the green shoots hardy enough to survive adverse weather? The news I'm hearing from my directors and other business contacts seems tentatively consistent with this improved forecast now being on a somewhat more solid footing. Before the last meeting, my contacts reported that activity was still declining, but that the pace of deterioration was slowing. Now, two months later, they characterize this as a stabilization that is in train. I see these comments as being in broad agreement with the Greenbook's assessment of economic activity.

My discussion with the U.S. CEO of ArcelorMittal is a good summary of how things are likely improving in a number of industrial segments. The parent company is the largest steel producer in the world. Last summer, steel prices peaked at over \$1,000 a ton, and inventories were relatively lean throughout the industry. As the recession intensified, inventories climbed and prices fell. Just recently, prices were down to \$380 a ton, which, I'm told, just covered variable costs. Since late last year, the firm has cut production sharply and repeatedly. Today their capacity utilization is about 40 percent, and they are running only two of their nine blast furnace facilities. During this period, steel service centers, which compete by buying steel and distributing from inventories, have been running down their stocks. About three weeks ago, their de-stocking process seemed to end, and prices have risen modestly, by about \$20 a ton. Currently Mittal sees production, shipments, and inventories all stabilizing. Looking to the summer, their order books for July are full, and they're now deciding whether to fire up a third blast furnace in the middle of July for August production and delivery. To justify this increase to 55 percent capacity, they need sustainable future orders—today's report seems helpful,

perhaps—not just the end of de-stocking. Making this judgment about sustainability is difficult, in part because Mittal’s chief customers today are the non-bankrupt auto companies and other durable goods producers whose order flow can be chunky. So if GM and Chrysler improve, that would further support production decisions like this.

I’ve heard stories similar to Mittal’s from other contacts. For example, a large, diversified tool and parts manufacturer said that some of its major customers have completed their de-stocking cycles, although they have not yet relayed plans to begin rebuilding inventory levels, so it’s not showing up in higher production yet. In addition, the continued restructuring process at Chrysler and GM is a positive factor for manufacturing output and particularly in our District. These reports seem consistent with our forecast of slow to modest GDP growth in the second half of 2009. Still, few businesses are reporting increasing activity, and the decision to raise production will be a close call for many firms for some time.

Another important element solidifying the outlook is the improvement in credit conditions. Clearly, conditions continue to be challenging. Many businesses report that lines of credit are being reduced and borrowing rates are being adjusted upwards. But even businesses who say that access to credit is still a problem acknowledge that conditions are not as restrictive as they were a couple of months ago. High-quality firms have found that debt and equity markets have become quite receptive to new issuances, and the TALF appears to have been both directly and indirectly beneficial for credit markets, according to participants whom I have talked to.

On the inflation front, I have been somewhat surprised that there has not been more downward momentum so far. As the Greenbook points out, inflation expectations have not moved down as expected. I did ask my staff to investigate quantitatively what the size of a labor

reallocation story might be for the natural rate of unemployment. There's a member of my staff who has some papers on reallocation, sort of a David Lilien-style measure of dispersion and how that translates into higher NAIRUs, and she updated that unobserved components model. The bottom line is that you can get the natural rate to move upwards of about 6 percent, but it's really hard to get much more out of that. Even if you went as far as 7 percent, which the data do not indicate, that's still quite a large resource gap.

I continue to hear a great deal of concern that our expansive provision of liquidity, large-scale asset purchases, and future federal deficits pose medium- and longer-term risks on the inflation front. I know we can deal with these issues in a variety of ways, as we discussed yesterday. However, many of these programs do have exit costs that are somewhat larger than I previously thought.

Our forecast continues to assume that resource slack and contained inflation expectations will result in a decline in inflation over the projection period. I do thank Dave for his clarification this morning. Frankly, I think he was more right than not. I didn't realize, looking at the distribution, that there's a cherry-picking to this—if you take out just the high and just the low, the range is about $\frac{1}{2}$ to 2 percent. So I think that's closer to inside the 70 percent. We're not expecting as large a decline as is in the Greenbook. We're looking for core PCE inflation to be closer to $1\frac{1}{2}$ percent in 2010.

Finally, from our January–March meetings to today, there has been a marked reduction in uncertainty and downside economic risks as I see it, especially downside skews. In March the abyss scenario weighed heavily on my list of concerns. So I favored what I will refer to as a robust control approach to policymaking, specifically: Try many programs in substantial size; give strong credence to their possible success in spite of their uncertain impacts; and hope that

some or all would provide needed accommodation. Of course, we're not out of the woods yet, but the likelihood of the abyss scenario has declined notably. In addition, I've been surprised by the reduction in disinflationary risks. So to my mind, these are very important developments. They lead me to put less weight on this robust control approach and move more towards the conventional weighing of the expected effectiveness and cost of these programs, and I do find myself moving back towards more balanced assessments of the necessary magnitudes for various nontraditional policies. Thank you.

CHAIRMAN BERNANKE. Thank you. President Rosengren.

MR. ROSENGREN. Thank you, Mr. Chairman. Like the Greenbook, the Boston Fed forecast now expects that we will reach an unemployment rate of 10 percent. Unfortunately, this statistic probably understates the degree of weakness in labor markets. In discussion with small and medium-sized businesses in New England, it is striking how many firms have placed workers on part-time schedules and how many firms have reported reducing nominal wages to avoid further job cuts. If New England's firms are representative of the wider economy, these practices may have implications for the recovery. First, firms are likely to defer hiring not only until they are confident that the recovery has firmly taken root, but also until they have restored hours to those workers whose hours they have already reduced. Second, wage pressures on inflation are likely to continue to be subdued, as firms in weak sectors of the economy defer wage increases until demand for their products increases.

In my forecast, the recovery is quite restrained, making it unlikely that we reach full employment during the forecast horizon. The recovery will be slower if mortgage rates do not encourage buyers back into the market. While the 30-year mortgage rates have come down somewhat from the recent spike, they remain well above the rates earlier this spring. Not

surprisingly, loan applications have slowed, and Realtors report diminished foot traffic after the rates increased. But higher rates may slow the recovery even further. Higher rates will likely put downward pressure on housing prices. This, in turn, will further diminish household wealth, reducing consumption as households seek to recover from already large wealth losses. In addition, lower house prices will likely add to the many households who struggle with the potential of home foreclosure. As I discussed briefly yesterday, an interesting aspect of the mortgage market during this recession is that five- and seven-year ARMs are not priced as attractively as they were earlier in this decade. If longer-term mortgage rates remain high, improved pricing of longer-term ARMs does have the potential to bring some borrowers back into the market.

While financial markets have improved, they remain fragile. The municipal bond market could still be roiled by the lack of political will by some states and municipalities to address their financial problems. Bank lending could be affected if commercial real estate and consumer loans continue to deteriorate, forcing higher loan loss reserves, which, for many banks, are still moving slowly relative to the growth of nonperforming loans. While the securitization market appears to have improved somewhat as a result of the TALF, it is unclear how the eventual removal of TALF financing and the possible legislation on securitization are likely to affect the recovery in this market.

Overall, my forecast is not much different from the last FOMC meeting, and, frankly, that forecast implies uncomfortable outcomes for both unemployment and inflation. Higher mortgage rates have caused me to push out the housing recovery, and the recent labor report has raised my path of unemployment. Many banks remain capital constrained, and I expect many more to be constrained as they need to increase loan loss reserves. Thus, I place a low

probability on rapid expansion of bank lending over the next two years. Even by the end of 2011, I expect that the unemployment rate will be well above full employment and inflation will be well below my target. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Bullard.

MR. BULLARD. Thank you, Mr. Chairman. In the Eighth Federal Reserve District, the decline in economic activity is slowing or stopped. Still, there are no immediate signs of improvement during the summer or fall. Business contacts are definitely subdued. I might even describe them as resigned to sluggish economic performance for the foreseeable future. In recent calls that I made, there were some reports of slower activity in the second half of May and into June, so we'll see if that shows up in the numbers going forward. That worried me a little bit.

On the national scene, my sense is that markets may have jumped ahead of the reality of the economy during the last 60 or 90 days. That said, I am hoping for some improvement in the second half, but I think there's a tremendous amount of uncertainty about where the economy will be going forward. I think we're vulnerable to further shocks. Shocks are unpredictable, so I don't know where they would come from. But when you're down, other things can happen. I also think that the longer that the recession drags on, the greater the likelihood that new problems can arise that would not have been problems if the economy had turned around sooner. And I just wanted to say I remain concerned about the global nature of this recession, which I think is largely unprecedented in the postwar era.

I've been concerned about possible deflation and a deflationary trap, that is, a steady state that we could actually get stuck in. If we were to enter such a trap in 2009 or 2010, we would have a very hard time getting out. The first priority for me has been to avoid this outcome, and that means building up inflation expectations. I think the probability that this will happen has

fallen some. For instance, the five-year TIPS inflation compensation has increased—it's about 125 basis points now. I know there's a lot of analysis about exactly how to look at that. If you just take it at face value, it has improved a lot from very negative values in December and January, but it's still not a lot of inflation over the next five years. It's below our inflation target, and you'd like to see it higher, I think. Also, the Greenbook forecast has inflation declining further, so I don't think we're out of the woods on the deflation threat, although the outlook has improved a lot from what it was in the December-January time frame.

I think we're entering a period of volatile expectations in markets. The markets are just not sure what to think about the unprecedented policy environment. They're looking at numbers that they have not seen before, and they're not sure what to think—large budget deficits where the longer-term outlook is very unclear. Given that, I think our purchase program looks like—and I put that in quotes: “looks like”—debt monetization. I don't think anybody involved wants to go there, but that's the appearance.

And you've got legislation pending that may appear to threaten Fed independence. I think the hard thing about our debt markets is that they're global markets, so especially for those outside the U.S. who may not understand the subtleties of our politics, this just looks like a lot of debt issuance by the Treasury and some purchases by the central bank. It's just very hard to get away from that perception, and that has made me pessimistic about further expansion of our large-scale asset purchases.

I think current policies are pushing very hard on our credibility. As I mentioned before, I don't think we could get away with these policies if we were a smaller developing country. Fortunately, we do have a large stock of credibility to draw upon, but we need to be careful. Just because everything has gone well for a long time in the U.S. doesn't mean it will continue to do

so this time around. Again, the policy response to this crisis has been unprecedented, so the current situation may not produce the outcomes that we hope for.

I'm also concerned, along with President Plosser and others, about the emphasis in the narrative on a large output gap keeping inflation at bay into the indefinite future. I don't think inflation is a near-term problem, but it could be a medium-term problem. I also think there are conceptual difficulties with the traditional output gap measures. The empirical relationships are not that great. So the moment is really ripe for a possible policy mistake along this dimension, since we're coupling that with our unprecedented policy action. I think that's going to remain an issue for the FOMC for some time to come. Thank you.

CHAIRMAN BERNANKE. Thank you. President Hoenig.

MR. HOENIG. Well, Mr. Chairman, in our District, clearly conditions do remain weak, but the information we are receiving suggests the contraction has lessened, and expectations for future growth have actually improved. We are seeing some reductions in residential real estate inventories in the lower-priced housing sector, partly because house prices have adjusted and partly because of some credits for first-time home buyers. Manufacturing continues to contract, but there are signs that the decline has moderated noticeably. Our May manufacturing survey showed that the pace of decline in production has actually reversed and in employment and capital spending it has stabilized. Preliminary results from our June survey further indicate that we are close to almost recovery levels in terms of District manufacturing. Our energy sector, having fallen pretty significantly, has stabilized, but we are primarily producers of natural gas, so stabilizing is about as good as we expect for any time soon. Commercial real estate remains a source of pretty considerable weakness. Our directors and District business contacts indicate that

a combination of higher vacancy rates and some difficulties in obtaining financing are really limiting that market in our region.

On the national front, our outlook isn't a whole lot different from that of the Greenbook, except in one important way, and that is that we have a more aggressive policy path for interest rates. They increase almost a year sooner than some outlined in the Greenbook. In terms of the inflation outlook, we are not seeing any pressures towards deflation and, actually, not seeing any signs at this point towards inflation either. So I see the risks as fairly balanced as we go forward. Thank you.

CHAIRMAN BERNANKE. Thank you. President Stern.

MR. STERN. Thank you, Mr. Chairman. Broadly speaking, District economic conditions continue to track the national economy for the most part, as is typically the case. There's pronounced weakness in business investment (both in commercial construction and in spending on equipment and software), signs of stabilization in consumer spending, and continued deterioration in the labor market, although recent declines in employment have not been as severe as those at the national level. There are some encouraging signs in terms of sales activity in the residential real estate market not related to foreclosures or short sales. And we do have a reasonably healthy agricultural sector and a reasonably healthy energy sector.

As far as the national outlook is concerned, my forecast is quite similar in most respects to the latest version of the Greenbook outlook. I expect positive economic growth to resume momentarily and to be quite subdued initially for the reasons that have been previously well identified—continued strained credit conditions, negative wealth effects, significant job losses, and lots of excess capacity both in the services sector and in a variety of goods-producing industries, as well. But given the pace and depth of the downturn, I've been asking myself,

shouldn't we expect perhaps a more typical recovery? I haven't been able to quite talk myself into that scenario yet, but I guess I wouldn't entirely dismiss it. In any event, I do expect momentum to build and growth to accelerate as we get further into 2010, and to accelerate further in 2011, basically because the problems that I just alluded to should be diminishing over time, and we're in an environment of expansionary policies.

As far as inflation is concerned, I continue to expect inflation to remain relatively low, given appropriate policy. And in this regard, I expect that the federal funds rate will have to start moving up in the latter half of next year, or early 2011 at the latest, in order to achieve that outcome. Thank you.

CHAIRMAN BERNANKE. Thank you. President Lacker.

MR. LACKER. Thank you, Mr. Chairman. Fifth District economic conditions are pretty well aligned with the national situation, with activity stabilizing in some areas, though at a level that's still pretty depressed. Our manufacturing index has risen above zero from deep into negative territory, and there are encouraging signs for orders, shipments, and, to a lesser extent, capital expenditures. Nevertheless, services, residential construction, and the labor market all remain depressed.

I think it does appear that the real economy is reaching something of an inflection point. Since the turn of the year, real PCE, light motor vehicle sales, and single-family home sales, starts, and permits have leveled out and, in some cases, eked out small gains. Initial unemployment claims have steadied and have come off their early peak. Consumer sentiment indexes have bounced back from their lows. The ISM manufacturing survey rallied, as did many regional surveys. Encouragingly, the new orders component poked its head above 50, and, moreover, this morning's durable goods report seems pretty positive.

Equally heartening has been the improvement in financial market conditions. Equity prices for financial institutions are up significantly from their lows in early March. Bank CDS spreads have declined. A wide range of large banks have successfully issued equity and non-FDIC guaranteed debt. Three-month dollar LIBOR rates are below 1 percent. Triple-B corporate bond yields are just below 8 percent, off from their 2008 year-end highs of 10 percent. I think all of this suggests a substantial reduction in risk premiums. And because the extent to which bank liabilities are government supported hasn't changed materially over the horizon, the improvement is probably due to a better outlook for fundamentals.

At the same time, these signs of stabilization do not by any means guarantee vigorous economic growth any time soon, and I don't think they will prevent unexpected shocks, obviously. The stabilization in housing starts and auto sales is encouraging, but it's occurring at extraordinarily low levels. The outlook for commercial real estate is not good—further increases in vacancies, delinquencies, and loan losses are in store. And many banks face further increases in credit card losses and commercial real estate losses as well. While, at this point, it looks as if these familiar features of cyclical downturns are going to prove manageable, they do suggest that we have a ways to go before the downturn is over and growth may be slow for a while.

Since December, core PCE inflation, excluding tobacco, has come in fairly close to 1½ percent. But even though energy prices helped us late last year, gasoline prices have been increasing steadily over the last few months. We've seen a consistent pattern over the last several years of increases in energy prices followed by smaller but noticeable increases in core inflation with a lag of a couple of months. This pattern makes me skeptical of the Greenbook's forecast that core PCE inflation is going to fall significantly over the next couple of months and

quarters. And it leads me to expect core inflation to remain where it is, or, if anything, to rise over the next few months.

Core inflation has been reasonably well behaved so far this year. Worries about future inflation have become disappointingly common over the last few months among financial market participants and among my contacts—people raise it independently. And a couple of Presidents have cited concerns that link that to what people see happening to our balance sheet. I think concerns about sustained deflation have evaporated more or less, and measures of inflation expectations have increased noticeably, obviously, since our last meeting. They're back to levels consistent with those we saw before the middle of last year, levels we associated with price stability. Market commentary speculated about the possibility—we talked about this a lot yesterday—that the Fed will come under pressure to monetize future deficits, given the currently unsustainable upward path they seem to be on.

We've been reasonably clear about our planned purchases, but we provided much less information, I think, about our reaction function. I think that's an inevitable byproduct of the urge to preserve discretion, and this is an example of the extent to which discretion can be the enemy of clarity. That lack of clarity, I think, contributed to the belief—and maybe it's not a predominant belief, but it is something you hear—that we might be setting a ceiling on long-term interest rates, kind of the way we did before the 1951 Accord, a period when monetary policy was very inflationary. In this context, the signs of stabilization in the real economy and financial markets make it unlikely that we could announce additional open market purchases without aggravating market concerns about inflation. But, more broadly, whatever we do with the statement at this meeting, I think we should strive to add clarity.

About exit, I think it's too soon to hint that it's imminent, but at the same time I think there would be a great benefit in clarifying the extent to which we believe we know how it would work and how we could accomplish that. And that's sort of the delicate balance to strike in the Monetary Policy Report, I think. Thank you very much, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Yellen.

MS. YELLEN. Thank you, Mr. Chairman. At our meeting in late April, we had begun to see hopeful signs of impending economic recovery, and subsequent economic and financial developments have strengthened the view that the economy is bottoming out. Even so, the outlook over the next several years remains disturbing. My modal forecast shows economic growth resuming next quarter, but I expect the recovery to be quite gradual. The output and employment gaps are, at a minimum, quite large, so it will take a long time to regain full employment under current monetary and fiscal policy settings. Although downside risks have diminished, I remain concerned that the recovery is still fragile.

The news on housing has been good. A broad array of data shows signs of stabilization, but the recent sharp rise in mortgage rates makes me worry about the future. Several of my directors and advisory council members who are connected with the housing sector stress that the improved outlook for housing remains precariously tied to mortgage rates.

Recent data on consumer sentiment and spending show improvement due in part to the fiscal stimulus. Even so, I continue to hear a flood of downbeat anecdotes on household buying patterns. My contacts tell me that demand remains weak and that firms are cutting prices to generate sales, putting profit margins under tremendous pressure. They note that consumers are continuing to shift from higher-cost discretionary items to lower-cost necessities. A major discount retailer reports that for the first time in his memory consumers are passing up bulk

purchases of food and other staples at discount prices in favor of smaller packages with higher unit prices, because they can't come up with the money to carry the associated inventory. This suggests very tight liquidity constraints. Consumers seem particularly concerned about the tightening of credit card limits.

And, of course, labor markets continue to deteriorate badly. It's a sign of how bad things really are that near euphoria broke out with the announcement of 345,000 nonfarm jobs lost in May. The unemployment rate is soaring month by month, and, even worse, it appears to understate the true extent of the deterioration, given the unusually high incidence of permanent, as opposed to temporary, layoffs, and the unprecedented increase in involuntary part-time work.

On the bright side, overall financial conditions have certainly improved since we last met. That bodes well for recovery. It's encouraging that so many banks have been able to raise private capital, and in many respects market stress has subsided. The combination of falling risk spreads on bonds, higher stock prices, higher Treasury rates, and a lower dollar seems consistent with a greater appetite for risk, probably stemming from the positive tone of emerging economic data. This development should be constructive for growth overall, but, as I said, I hope that the associated rise in mortgage interest rates doesn't reverberate too strongly. With foreclosures on the rise, and house prices still falling, higher borrowing costs could stall the emerging rebound in residential construction, further impairing financial institutions and markets and, thereby, hampering the recovery more broadly.

My forecasts for output and employment are similar to the Greenbook's, so I won't go into the details. I do want to emphasize that I anticipate a rather sluggish recovery, not the rapid V-shaped recovery we have frequently seen following deep recessions in the past. The process of balance sheet repair that households and financial institutions are undergoing will result in

subdued spending for an extended period, and monetary policies here and abroad are not able to play as big a role as usual in promoting recovery because of the constraint of the zero lower bound on short-term interest rates.

Given the uncertainties in the outlook, I very much appreciated the range of well-designed alternative simulations presented in the Greenbook. I noticed that even under the typical recovery simulation, which has much stronger growth than in the baseline, the unemployment rate remains well above the 5 percent NAIRU by the end of 2011, and inflation hovers around 1 percent. This outcome reflects the large unemployment and GDP gaps estimated for the first quarter. With a GDP gap of about 5½ percent, the economy is in a deep hole, and it will take a long time to climb out, even if growth is rapid. This is a key consideration in designing optimal policy.

My forecast contains an estimate of the output gap similar to the Greenbook's, but I'm well aware that the size of the gap is uncertain and sensitive to the precise methodology that's used. So for this forecast round, we assessed the level of the gap from a variety of different perspectives to see if any central tendency emerged. The analysis that we carried out turns out to be very close to what Mike Kiley described in yesterday's briefing and what the Board heard in the briefings that you had on Monday. Obviously, great minds think alike, and I know President Evans and his staff in Chicago were doing exactly the same things that we did and the Board did. So I won't go into all of the details. I'll just say we reverse engineered wage and price Phillips curves to estimate the level of the GDP gap that would produce the inflation rates now being observed. We used a variety of wage and price measures to assess sensitivity. We investigated whether a possible decline in the efficiency of the job-matching process might be raising the NAIRU by comparing cross-industry dispersion of employment growth in this cycle with earlier

ones. And we, too, assessed the evidence relating to the Beveridge curve and possible shifts. I simply want to second or third the conclusions that Board staff reached and that President Evans described. It is possible to find reasonable methodologies that would lead to a short-run NAIRU higher than that used by the Board, or to output gaps that are somewhat smaller than those that are embodied in the Greenbook or in our forecast. But no matter what methodology is used, in every case we find very substantial slack in labor and product markets.

I'd like to discuss briefly one thing that we did. We looked at whether the financial crisis and the large sectoral reallocations away from housing finance and autos may have slowed underlying total factor productivity growth and thereby the pace of potential output growth. If so, our forecast of output growth going forward could be too large. Although measured TFP has declined over the past year or so, which is typical of past recessions, we find that, adjusted for the utilization of labor and capital, it has actually risen strongly during the recession. The conclusion that underlying productivity growth has remained on or actually above trend is confirmed using an alternative approach of estimating permanent technology shocks from the productivity data.

So, to conclude, if the recovery is as slow as the Greenbook and I expect, it will take quite a number of years to get back to potential output. As a result, I expect core inflation to drift lower over the next few years, falling below the 2 percent rate that seems best to me.

CHAIRMAN BERNANKE. Thank you. President Fisher.

MR. FISHER. Thank you, Mr. Chairman. I recently accompanied my wife to a board meeting of the American Film Institute, of which she is a director, in President Yellen's District in Hollywood, and to prepare for that trip I read Evelyn Waugh's wonderful novel *The Loved One: An Anglo-American Tragedy*. The plot line is about a minor British poet who goes to write

the greatest movie of all time about the life of Percy Shelley and settles for employment at a pet cemetery called The Happy Hunting Ground. There's a precious scene in that novel where the tough head of the film studio is surrounded by people around a table and in the back benches. The people around the table are described as "yes men" and those on the back benches as "nodders." I find myself nodding and saying yes—[laughter]—to everything that has been said by my predecessors at this table. There is a unanimity of view, it seems to me, that, as President Yellen just pointed out, the economy is bottoming out, but it is a gradual and fragile recovery, and it will take a long time to regain employment. I forecast an almost checkmark-shaped recovery, which is a long recovery, as President Rosengren stated, with the unemployment rate masking some of the problems we have with our workforce, and I do not foresee a very quick recovery.

What concerns me is that the people that I talk to, the CEO list that I give you, and even the people we talked to in that part of the country, which is not known for being plugged into reality, also have a unanimous view. I want to touch on two aspects that were mentioned by my predecessors here. The first is with regard to President Rosengren's point that unemployment may be masking deeper problems. Even in your District, President Rosengren, I noticed that Harvard Law School just sent out a letter recommending that their graduating class seek employment in other fields—perhaps at pet cemeteries; I'm not quite sure. [Laughter] If you look at Skadden, Arps or Cravath, Swaine, & Moore, people that I talk to, they have deferred an entire class in terms of their hiring. So here's the point: I think we also need to be cognizant of the fact that the service sector is going to have a very slow recovery in the process. This was underscored by the CEO of AT&T, who said, "If it isn't life or death, we're not hiring anybody

or investing in anything.” And I think that’s pretty much a unanimous view around the table of CEOs that I spoke to.

Second, President Lockhart mentioned cap-ex. Cap-ex is being postponed. When you have excess slack, you’re going to have less commitment to cap-ex. But here’s the point I want to mention: Among the CEOs that I speak to, and even people that you would never expect to be critical—I’ll drop a name, because it was absolutely shocking, Warren Beatty, for example—there’s a unanimous worry that, “The plethora of programs coming out of Washington is creating enormous uncertainty.” Uncertainty is the enemy of decisionmaking, the enemy of capitalism. We’ve talked about this before. It’s not that changes are being proposed. It’s that no one knows when they will stop, and I find that this has heightened uncertainty in the business sector and is retarding cap-ex. And that won’t change until there is resolution about the enormous changes that have been proposed by the Congress, by the Administration, and so on. It’s not that the business community and others are against the proposals, it’s that there are so many coming so quickly that it’s creating enormous uncertainty. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Is this the Warren Beatty who starred in *Reds*? [Laughter]

MR. FISHER. Also *Heaven Can Wait*. [Laughter]

CHAIRMAN BERNANKE. Thank you. Vice Chairman.

VICE CHAIRMAN DUDLEY. Well, hopefully heaven can’t wait too long. [Laughter] I just want to amplify what President Fisher said about the uncertainty created by all of the Obama Administration initiatives. We heard from one large firm that this is really important, especially in health care: Why would you build a new wing of a hospital if you don’t know what the reimbursement rates are going to be?

Generally, I think the economy is still very weak. I think we're probably at or very close to a cyclical bottom. The market reaction, though, is really mostly, to my mind, about pricing out the tail risk of a depression rather than pricing in a strong recovery, and I think the market over the last week or two has sort of been rethinking its reaction. What has been going on in the labor market is pretty striking. The rise in the participation rate may be indicative of stress in terms of balance sheets and people being forced back into the labor market, even though the prospects aren't very good.

Past credit crises certainly suggest that the dynamics of recovery this time will be very different. The wealth shock is unprecedented. Credit availability is going to be constrained for quite a while. There are significant rollover risks for large groups of borrowers—the commercial mortgage market is probably the most significant one. And it's going to take several years, I think, for the financial system to get back to more normal functioning.

One thing that struck me in looking at the macro data is how we've been benefiting from unusually favorable income dynamics up to now. If you look at the trend of income relative to hours worked and wages, real disposable income growth has been very, very strong—6½ percent at an annual rate in the first quarter and on pace by the New York Fed forecast for a 4.2 percent annual rise in the second quarter. That has allowed the saving rate to rise sharply without triggering a big fall in consumer spending. The problem is that the factors underlying the sharp rise are all behind us: the big increase in transfer payments, automatic stabilizers, the large COLA for Social Security caused by the big run-up in energy prices last year, the tax cuts, changes in withholding rates in April, and payments made to Social Security recipients in May and June.

Looking forward, the trend in real disposable income is going to be much worse in the second half of the year—we're probably going to see actual declines. So we're assuming that consumption will rise despite the fact that disposable personal income is falling, and the saving rate will fall as a consequence. But I think there is a risk to the downside, because maybe the saving rate won't fall and consumption will just be weaker than we anticipated.

The other thing I am worried about is this: I think it's very premature to rule out further financial market disruptions. A couple of times in the crisis we've thought that things were getting better, and then there was another shock. Obviously, when Lehman failed, we had no idea what the macroeconomic consequences of that were going to be. One thing I am worried about is that the TLGP is almost certainly going to end September 30, so that means financial institutions are going to face more rollover risk for all the debt that's coming due after September 30. And we still have several very large, systemically important institutions that are very fragile and that have broad international operations. We don't have a resolution mechanism to deal with them if they get into difficulties. And the political will to help these firms if they do get into trouble, I think, is quite a bit subdued compared to what it was a year ago. So I think that's something to be concerned about.

On inflation, I think the near-term outlook is that core inflation is going to moderate from where it has been. The tobacco taxes are sort of a funny anomaly—how you raise taxes shouldn't really affect the inflation numbers, but it does in certain cases. Inflation expectations seem to be well anchored despite some worries about monetization of the debt, and we have a very large output gap. To make sure that we keep inflation expectations well anchored, I think we need to do more in articulating why we will be able to exit smoothly. The biggest upside risk on inflation to me would be a broad loss of confidence in the U.S. abroad caused by worries about

fiscal sustainability and the independence of the Fed. The only way I can see getting a big inflation problem any time soon is if the dollar were to collapse. There's probably some risk of that, but I think it should be very low as long as we communicate clearly that we have the tools to manage our exit smoothly and that we are committed to long-term price stability, regardless of what the fiscal authorities do. Thank you.

CHAIRMAN BERNANKE. Thank you. Governor Kohn.

MR. KOHN. Thank you, Mr. Chairman. Data since the last meeting, along with what we have heard around this table, and reports from the Reserve Bank Districts, should give us much more confidence that the economy is indeed in the process of bottoming out. And I think basically what we're seeing is that the sources of weakness are abating. We've got consumption leveling out, housing demand leveling out, and eventually investment should follow that process. Maybe we're seeing a little bit of that in today's meeting. The inventory cycle is further along, with stocks being reduced—not as much today, Dave, I guess, as we might have anticipated, but they're still being reduced—and they'll come into better alignment with sales. At that point, more of current sales and any increase in sales will need to be met from increases in production and ultimately increases in employment, setting in motion a positive accelerator multiplier process. Commodity prices are rising, anticipating increasing demand, and sentiment has come back from a very, very weak level. Of course, as many have pointed out, importantly, in financial markets, we see narrowing spreads, rising equity prices, access to markets for banks raising equity, and access to bond markets for businesses. So I think there's a lot of news that suggests that the economy is, indeed, stabilizing. But, like many others around the table, I don't see many signs that there's a rebound in economic activity yet, nor do I see signs that the rebound, when it comes, will be other than quite moderate. So I have strengthened my outlook a

little bit relative to April, but not by much, and it has still got the same basic pattern, which is very similar to the Greenbook.

I think there are a couple of forces that will be holding back the recovery. As a number of you have mentioned, one of them is in the financial sector. We've had encouraging news on financial conditions and financial repair over the intermeeting period. But I think the underlying problems are severe and structural. Further improvement is likely to be gradual. The markets that seem to be working well are the plain vanilla markets, like corporate bonds, where risks are more easily judged. But even there, risk premiums remain quite high by historical standards. The costs of debt and equity capital are elevated. Securitization markets away from government support are still held back by uncertainty both about the legal regulatory framework—and I think that uncertainty has probably been increasing in recent weeks with various proposals—and about the economy. I think the securitization markets are particularly sensitive to economic uncertainty, because the risk characteristics of securitized debt are more complicated. Those problems aren't going to go away quickly. More credit is going to have to flow through banks. Banks continue to face constraints on balance sheet capacity—they're using the capital they raise to repay the government, not to expand loans. Losses will be mounting in coming quarters on commercial real estate and consumer loans, and I think credit supply will be slow to ease and spreads of bank lending rates relative to cost of funds will remain elevated as earnings and capital are restored.

Many of the innovations that enabled households to shift consumption over time, particularly to bring consumption forward when wealth rose, will be much more limited in availability—home equity lines of credit, subprime credit of all types—and markets remain fragile. I think the tentative positive interactions between financial conditions and economic

conditions that we've seen over the last few days and months can be easily disrupted by some bad news. So credit supplies will be limited and risk spreads will shrink gradually, only slowly reflecting the full effects of the low federal funds rate and our credit-easing actions.

Even aside from the credit effects, I think global aggregate demand is likely to recover gradually. Like President Bullard, I'm really struck by the global nature of this downturn. I think households and businesses will remain very cautious everywhere following the unpleasant surprises of recent quarters. President Fisher's comments about uncertainty holding back both consumption and investment are well taken. And uncertainty about the course of the economy, about the availability of jobs and business earnings, will abate slowly. Many areas of the world are lagging our cycle. I worry especially about Europe, which faces very sharp increases in unemployment and problems in the banking sector that they're only beginning to acknowledge and confront.

Also, there are issues about where the global demand is going to come from over the medium term. U.S. households will not be the engine of global demand, as they have been for the last fifteen years, as those households rebuild wealth. Staff has roughly stable saving rates for the U.S. I think they're more likely to trend higher than lower after the recent experience. And even with stable but higher saving rates in the U.S., it is not clear what will fill the global aggregate demand gap. The lack of domestic demand in Asia—the Chairman's global saving glut—has been holding down equilibrium real rates in recent years, and that's not going to change very rapidly. Stronger demand in Asia ultimately depends on structural reforms in the Chinese economy especially, and especially in its financial sector. So I don't expect any rapid reduction in the dependence on export-led growth from Asian countries. And we're reaching the

limits of fiscal policy to fill demand gaps—demographics and entitlement concerns everywhere are raising questions about fiscal sustainability and will constrain fiscal impetus.

It's always hard to see what will spark a recovery at the bottom of a recession, and we could be pleasantly surprised this time, too. But my best judgment is that these factors are holding down the equilibrium real interest rates to very low, perhaps negative, levels at a time when the ability of monetary policy around the world to lower rates well below equilibrium is severely limited by the zero nominal bound and by low inflation. In these circumstances, I see a large output gap persisting and putting downward pressure on inflation. I agree that the gap is unobservable and that we can make mistakes in gauging it. There are also important points about resource-shifting, which raises the NAIRU temporarily. But I was very impressed by Mike Kiley's charts and by President Evans's and President Yellen's comments. I think we've got a sizable output gap right now by almost any measure, both in the labor market and in the product market. I think a lot of indirect evidence is consistent with that sizable gap, especially in the labor market. Most measures of labor compensation have decelerated sharply in recent months and quarters.

To be sure, inflation hasn't come down as fast as expected, reflecting in part higher energy prices and special factors. The tendency for some inflation expectation measures to edge higher is troubling, and we need to pay very careful attention to that in our policymaking. Productivity growth has been surprisingly rapid. The staff doesn't interpret the very rapid growth in productivity in the first half of this year as a pickup in the underlying trend, but rather as a change in cyclical characteristics. But surely the rapid productivity growth we seem to be experiencing doesn't suggest a slowdown in trend growth, and cost pressures from unit labor costs should remain subdued. With the global output gap large, competition will be intense and

there will be little pricing power for business or labor. So like many others, I forecast a slowing in inflation, albeit not as much as in the staff forecast.

So, on balance, I see persistent output gaps and inflation falling below my 2 percent objective over the next few years. My forecast, like that of the Greenbook, is that we don't do very well against either of our dual objectives. Thank you.

CHAIRMAN BERNANKE. Thank you. Governor Warsh.

MR. WARSH. Thank you, Mr. Chairman. I thought I would talk briefly about the real economy, then financial markets, and then inflation, in that order.

On the real economy, in terms of near-term growth and employment prospects, like many of you, I think GDP growth looks shaky through year-end. The arithmetic of GDP may yield a positive quarter or two, but I see very little evidence that that will be enduring, or at least something that is a strong foundation on which to build. President Fisher was much chagrined yesterday to park his shiny new car next to what he described as my clunker, and he suggested that I take the government up on its generous \$4,500 voucher. I've decided my answer is "yes," so I'll do my part, I think, in the third quarter. [Laughter]

Unemployment is walking, if not running, away, as Presidents Rosengren and Yellen suggested. I suspect that the trend in unemployment is likely to create a political demand for consideration of a new fiscal package. I think the debate on that will be hugely consequential, not necessarily in terms of the economy, but in terms of getting further market attention on fiscal sustainability.

Downside risks to this rather weak forecast, I think, are in place, both with respect to non-U.S. growth and non-U.S. financial market improvements, to which I think President Dudley made good reference. In terms of medium-term growth prospects, I also see downside

risks as pro-stability policies proliferate. I think unemployment is likely to be more determinative of the shape of this recovery than the path of housing prices or other asset prices, and I share the views expressed by many that NAIRU looks as if it's trending higher. I raise that not really to quibble about the size of the output gap, but rather to suggest that the reallocation between capital and labor is likely to last longer and that the incomes in this economy in the medium term are probably less reliable, given the emerging mix of macroeconomic policies. I compliment Dave and his staff for continued work on the labor market damage scenario, which, I think, is more real than we wish to imagine.

Internationally, it strikes me that there is much more complacency about where things stand on the global economy than I would have expected. When we talk to bank regulators and large banks elsewhere around the world, there's almost a nostalgia about the events of last fall. And many of them have not gone through the capital-raising that our banks have. I think we are rightly uncertain, as both Bill and Don suggested, about the risks to U.S. institutions. But I think the risks look to me at least as high, if not higher, for banks elsewhere in the world, and I'm really struck by the fact that they are seeming to race back to the good old days at capital levels that look to me quite low, with expectations for GDP growth in their home countries which, I think, are likely to disappoint.

Decoupling, which, I thought, we had proved over the course of the last year was a myth proliferated by Wall Street, seems to have found its way back into financial markets and to economists traveling around the world. There is a view that, well, even if the U.S. bumbles along, China has figured out how to be a strong growth engine for Asia, and Europe is getting traction in and of itself. In my view, we have one global integrated economy, and those who

think that somehow these other engines of growth are sufficient to get us through this near-term weakness, I think, are likely to be disappointed.

On the financial market side, the capital-raising that came out of the stress test results is nothing short of impressive. That is \$75 billion to keep us away from Sunday night meetings, so that has got to make us feel a little bit better. The capital and corporate equity and debt markets are as open as they've been since this crisis began. But having said all of that, I must say I'm a little troubled that markets don't seem to be discriminating. I'd be more confident if there were more differentiation between and among assets in the U.S. or between U.S. assets and non-U.S. assets. It looks to me as though the kind of market discipline, which I have described as being back and punitive, seems to have stepped back for a while. And there are a whole lot of lemmings that seem to be chasing indexes and buying into everything. So I'm not as comfortable as I wish I were about this bounce off the bottom in asset prices everywhere around the world since the March 9 lows.

As I think was described by Bill and others, what we're seeing in these markets I would rationalize as an abatement of the panic, rather than a sign of robust recovery. These asset prices strike me as not yet having found a new sustainable equilibrium, so the summer could test the value of these asset prices. I put a little emphasis on this, because it does strike me that the increase of, say, 30 percent on average in asset values from spring until now might be more consequential than all of the fiscal stimulus packages in trying to help get this economy going again. And to the extent that those wealth effects are reversed, I think that's likely to be hugely consequential.

We talked a little bit yesterday about Treasury markets. I would only say that in the intermeeting period I think the move up in Treasury yields is for both benign and less benign reasons—it's hard for me to differentiate exactly which carries the day.

Finally, on the inflation front, as many have suggested, I think the dashboard indicates some normalization of inflation readings consistent with marking down prospects of deflation, rightly in my view. We can see higher inflation compensation in the TIPS market and elsewhere. Still, inflation expectations remain seemingly well anchored, even though we have now seen in markets both inflation and deflation scares that have gotten their attention and maybe gotten some of ours, too.

I'd just end with a sort of thought experiment, much of which we could carry on in Round 2. If we had this weak current economy and this set of projections that we've all forwarded for consideration and public disclosure, but had not had the panic and the extraordinary fear-inducing moments of the last year, where would policy be? Would our prospects for policy be different? Or are we keeping our policy accommodation at the extraordinary levels in part because of what we've endured? I'm not sure I know the answers to those questions, but they are things I will continue to think about. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. Governor Duke.

MS. DUKE. Thank you, Mr. Chairman. The banks have settled down a little bit since the stress test. They report the stress tests were not all that terrible, and they were as surprised as I was at the ease of the capital raise. They're looking for opportunities now to raise debt. There's no trust preferred available, and a couple were issuing investment units; one had a common equity and a convertible bond component, and another reported having to add warrants to debt in order to attract investors.

All would like to pay back the TARP, and they're divided into those who most likely will not be able to soon and those who can. For those who will not soon, they're not sure that they're out of the woods, and they acknowledge that they wouldn't survive being wrong. Those who have or will soon pay back cite worries about losing their top revenue producers, the cost of the government capital, the fact that new investors who are providing capital want them to get out, and—probably the most honest response—“Because everybody else is getting out.”

In terms of liquidity, they are moving down to or up to 100 percent loan-deposit ratios—those with higher ratios are shedding credit and those with lower ratios are the beneficiaries of that. Deposits are still growing, but at a much slower rate, and, interestingly, in discussing their liquidity, they all pointed to their excess funds on deposit with the Federal Reserve. So, again, I don't see any indication that bankers are concerned about excess reserves right now. In fact, they think they're creating them.

In terms of profitability, margins are finally improving. Reserves are still growing. Expenses are down except for FDIC assessments. Fee income is flat. Mortgage income was huge in the first two quarters, but refinance activity, in particular, has slowed dramatically with the higher rates.

In terms of credit management, the long process of working through residential problems continues. Construction lending has plateaued or a little bit better. OREO properties are moving, although there are still problem areas, such as lots in Arizona and condos in Florida. C&I is actually holding up. A few banks mention noticeable problems with small businesses and said that mom-and-pop stores are simply giving up. Their classifications are growing as the financial statements come in and show the expected lower profitability, but they're still not showing up in delinquencies. In terms of commercial real estate, it's getting worse, but it still

seems manageable. The bottom is not falling out. Loans are classified, but not yet charging off. In terms of office buildings, as the leases renew, rents are being negotiated down, and one banker who had just worked through his residential construction was dismayed to find that the offices he had financed were full of real estate companies. [Laughter] In terms of retail, there's a lot of fallout among the smaller tenants, and there are problems with the anchors; the anchor tenants can renegotiate because there's a clause that gives all of the smaller tenants an out if they lose the anchor tenants. So the anchor tenants are absolutely taking advantage of the ability to negotiate down. And then finally we asked about the auto dealers, and they are, I think, pretty successful at moving the inventory, but they are left with debt on special use properties.

In terms of new lending, high-quality credits are paying down, and demand is all from low-quality credits. One banker said he was willing to battle the examiners over his own weaker credits, but he was not willing to take on someone else's, so if someone is turned down at their primary bank, they're unlike to find a home anywhere else. There are lots of problems with appraisals. In particular, there are not enough recent comparables. Many banks are exiting some products, some geographies, some industries, as well as credit-only relationships, although risk pricing is the best in ten years.

So I'm left to wonder how we finance this recovery. Staff recently helped me use the flow-of-funds data to look for the drop in credit so far, and we found that the drop in credit up to this point has not been nearly what you might have expected and has actually been in the middle to the upper range of past credit crunch recessions. I believe that the support provided to the financial system kept it from dropping, but that support is now steadily being withdrawn, if not intentionally, then through stigmatization. So I believe the credit crunch is still to come. Many, many bank balance sheets are still supported by government capital and liquidity. This credit

cycle also will leave plenty of credit impairment wreckage behind. The bankers and their examiners are very, very risk-averse. I think business credit is going to hold up better as profitability will probably come back with the improvement of sales as well as the fallout of competitors, but consumer credit is going to be impaired for a long while. The number of bankruptcies, delinquencies, foreclosures, and charge-offs, the fact that the same credit score now equates to a much higher risk, and the fact that collateral values are significantly lower will all contribute to less credit available to consumers.

Most importantly, there are a number of broken business models. While I do believe that we need new business models in these times, the transition is likely to be much more painful than we currently anticipate, and I see it in two areas. The first area is mortgage lending, where there's no visibility on what is going to happen with the GSE system, and there is yet no securitization 2.0 on the horizon—so I don't see what happens in terms of housing finance. The second area is credit cards. This may be a second, smaller wave of problems similar to the subprime mortgage crisis. As I hear anecdotes of people who are in trouble on their mortgages, I am struck by the number of stories that include phenomenal amounts of credit card debt—\$30,000, \$50,000, \$100,000—built up by taking on more and more cards with increasing lines, then reloading by refinancing a first mortgage or an equity line and starting again. Just as the subprime market failed when refinance stopped, credit charge-offs are going to grow as the availability of larger lines, additional cards, and debt consolidation loans disappears. This is fed by the current business model for credit cards, which was a land grant model. The issuers would cast a wide net, trolling for new customers using teaser rates and additional lines, and then they would underwrite and price after acquisition of those customers, pricing for profitability by testing price increases on a sample of customers with similar characteristics and then increasing

the profit by balancing the higher interest income with lost customers and write-offs. Line management included a discovery that the highest limit becomes the primary card, so line increases were based primarily on propensity to spend and propensity to carry balances, offset by the higher credit risk.

New restrictions both in our regulations and in legislation now will require that they underwrite in advance, and I'm not quite sure whether this means underwrite the ability to carry the interest or the ability to pay off in the traditional three- to five-year time frame. I don't know what "capacity to repay" will do. Combined with record charge-off levels, estimates are for a reduction of 25 to 30 percent in availability. If we have nearly \$1 trillion in outstanding, this could be a reduction in credit available of \$200 to \$250 billion, combined with an inability to reload through equity loans or home refinance. Indeed, the second most cited reason for home equity was to refinance credit card debt.

So what does this do to the saving rate if those most likely to finance deficit spending can no longer do so? I had written down here that I don't know yet, but fortunately, Governor Kohn, President Yellen, and the Vice Chairman have all suggested the possible impact of this reduction in credit. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. Governor Tarullo.

MR. TARULLO. Thank you, Mr. Chairman. Listening to the 15 of you who have preceded me this morning, I am struck by the fact that the central tendency of our economic analyses may be even narrower than that suggested in the projections that were gathered in advance of this meeting. So although, Mr. Chairman, it's your job and not mine to summarize, I think much of what I'm going to say necessarily reiterates much of what has already been said.

First, the recent hopeful signs of stabilization cannot obscure the fact that economic conditions remain poor. Even some of the hopeful signs themselves reveal how bad things are. As many of you have noted, improvements in financial market conditions are still quite dependent on government-provided liquidity facilities and guarantees. The recent rise in housing starts follows a precipitous multiyear decline, and it could yet be blunted by rising mortgage rates.

Recent developments in the labor market have also been cited as cause for guarded optimism, but again, as many of you have noted, the news is not all good. In fact, the news is not good at all, it's just less bad. The decline in initial unemployment claims and the reduction in job losses over the last couple of months are surely welcome, but unemployment claims are still at very high levels, and we are still losing jobs in the economy, just at a reduced rate. Meanwhile, the unemployment rate continues its apparently inexorable rise towards double digits. The rate of involuntary non-full-time employment has more than doubled in the last eighteen months, and the level of aggregate hours worked continues to decline. Since December 2007, the ranks of unemployed Americans have swelled by seven million. Analogous points could be made about industrial production, retail sales, or just about any other economic indicator. So let me end this first point by noting that, whatever the merits of the protagonists in the great debate on the correct measure of the output gap, the number is clearly large.

My second point, again, I think, reflecting what many of you have already said, is that there continue to be many reasons to believe that recovery, when it does come, will be slow and fragile. I have now been tutored by Governor Duke to listen to the words that recur the most during a conversation, and this morning "sluggish" was high among them. Although this is not a particularly controversial observation, I think it's one that bears repeating as we consider our

policy trajectories going forward. As many of us have noted previously, background circumstances suggest an elongated recovery. Economic downturns that begin with a financial crisis have historically been more painful and with longer recovery periods than other serious recessions. Households, financial institutions, and other firms are all repairing their balance sheets in reaction to big reductions in asset values and large debt overhangs. This response, while understandable and in many respects necessary, leans against the stimulus provided by increased government spending. Some headwinds are even more apparent than at our last meeting. Even as we're heartened by market reception of the SCAP process and by the significant capital raises of many of the SCAP institutions, we must also note that, overall, bank lending is still declining. Moreover, the list of banks slated for closure grows longer each week, as does the list of problem banks that I receive once a week. As some of you around this table have been predicting, the difficulties in commercial real estate markets are growing and may soon be felt with a vengeance at many regional and smaller banks.

Expectations of an uneven and gradual recovery are reinforced when one looks abroad. As in the United States, signals from Europe are mixed, albeit on a somewhat lagged basis, but there are, as here, drags upon renewed growth when growth does come. The effects of the smaller stimulus programs in Europe will dissipate more quickly than in the U.S. Also, conditions within a number of European banking systems are still not well known. The apparent reluctance of many countries to conduct and report publicly on their own stress tests has stoked concerns that weakness in real estate, Eastern Europe, and other exposures are weighing heavily upon some of these institutions.

Several of you have already mentioned China. China is frequently cited as one bright spot in a world economic canvas that is otherwise dark gray, but it, too, actually presents a more

ambiguous case. While the size and speed of China's stimulus package has produced impressive results in bringing its GDP growth above 7 percent, there is little evidence that China or for that matter other East Asian nations are adjusting their growth models toward greater emphasis on domestic consumption. They seem to be using infrastructure and other stimulus spending as a kind of holding pattern, apparently expecting a significant rebound of consumption in the United States and Europe. Thus, even the Chinese recovery may have limited self-sustaining momentum. The continued and, I fear, misplaced faith in the resurgence of the old export-led growth model is captured in the image of about 400 empty container ships parked in Singapore awaiting a return to the old normalcy.

Like everyone, I welcome the indications of stabilization and in some areas bottoming out. Few would deny that we are significantly better situated than just a couple of months ago. However, we should not be carried away with optimism or too hastily moved towards the exits. In the current circumstances of a significant output gap, rising unemployment, uneven improvement in financial markets and firms, and uncertain prospects abroad, inflationary pressures are neither evident nor likely to be generated within the U.S. economy any time soon. While I do not expect to double dip, I don't think it can be ruled out entirely either. The economy remains unusually vulnerable to exogenous shocks or to renewed stress at one or more significant financial firms. This is the most serious economic slump since the Depression, and it is far from over. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. This is a good time for a coffee break of about 20 minutes.

[Coffee break]

CHAIRMAN BERNANKE. Okay, let's recommence. I have a summary, which I will read to you. Most participants saw a slowing contraction and tentative signs of stabilization in economic activity. Business and household confidence has improved some, and surveys show improved expectations for the future. Inventory liquidation continues, which is a positive for growth later this year, and financial markets have continued to improve. Despite this relatively good news, though, most saw the economy as still quite weak and fragile and vulnerable to new shocks. Labor markets are extremely soft, and financial markets may be ahead of themselves. While output should begin to grow again, the pace is likely to be quite slow and tentative. Although downside risks have been mitigated somewhat, they still exist. Likewise, recovery abroad seems likely to be uneven and gradual, with Europe still facing financial problems and East Asia still too reliant on exports.

Consumer spending, though no longer declining, is not robust either, reflecting the weak labor market, sharp wealth reductions, and higher oil prices. Real income growth is likely to slow for the remainder of the year. Consumers continue to focus on necessities and appear liquidity constrained. Housing has shown a few signs of life but is vulnerable to the effects of the rising mortgage rates and continuing high rates of foreclosure. Capital investment remains very soft, reflecting unused capacity and uncertainty about the economy and about the policy environment. Across industries, weakness is widespread and includes service industries, although some areas, such as energy and agriculture, are doing better.

Labor markets remain a particular area of concern. Despite some improvement in new and continuing UI claims, and a less bad payroll report for May, the unemployment rate and the rate of job loss remained high, with little near-term prospect for improvement. Workweeks are shorter. Total hours of work have fallen significantly. More layoffs are permanent, and the

amount of involuntary part-time work is high. I should add that participation rates have risen also because of wealth effects. Slow wage growth is reflecting this weakness. The NAIRU may have risen somewhat, but a significant unemployment gap still probably exists.

Financial markets continue to show improvement. The banking stress tests were perceived to be successful and resulted in capital raises and improved funding conditions. Loan volumes are not falling especially dramatically, but in part this reflects government support, which may be withdrawn. Reduced lending and tighter terms also reflect worsening credit quality, and banks still face substantial credit losses in coming quarters. Other credit markets also continue to improve, including the corporate market and the ABS market. The financing of commercial real estate remains problematic, however, and fundamentals for the sector are weakening. Improvements in financial markets support the stabilization of the broader economy but could prove fleeting if the projected strengthening in growth and profits does not materialize.

Higher oil and commodity prices will raise headline inflation in the near term, while core inflation seems likely to be low. As noted, wages continue to remain nearly flat, and productivity has been surprisingly high, so that the growth in unit labor costs is moderate. Overall, inflation seems likely to be well controlled in the near term, and most see deflation risks as now relatively small. Some were concerned about inflation expectations in the medium term. As measured by TIPS breakevens and by most household and business surveys, inflation expectations seem to be stable at reasonable levels. However, publicity about fiscal deficits and the Fed's balance sheet has concerned many in the public and may be reflected in inflation risk premiums and longer-term interest rates. Communication about the exit strategy and the Fed's commitment to price stability is an important tool for managing expectations. At the same time,

some suggest that it is important not to signal that the unwinding of the Fed's extraordinary measures is imminent.

That's my summary of what I heard, which I do think was a fairly consistent message around the table today.

Let me just add a few thoughts, which will not be particularly novel, given all that has been said. First, I think one can't help but be at least somewhat encouraged by the developments in financial markets since our last meeting. The Federal Reserve staff and leadership, I think, deserve some credit for the assessment of the banking system, and the results that that had. It's very encouraging that banks can raise equity and that their funding has improved—CDS spreads have declined. I think that, although systemic risk is still around, it is much less now than it was a few months ago, and the reduced probability of a major calamity in the financial system is, in itself, I think, a positive. We've also seen improvements, as I mentioned, in other credit markets as well, partly because of government support, including Fed programs.

Obviously, an important development in the financial markets in the intermeeting period was the increase in long-term interest rates. Yesterday when the staff showed the changes in government rates across a number of industrial countries, I thought it was interesting that the increase in the U.K. rate was about the same as the increase in the German rate, both of which were much less than the U.S. rate. Since the U.K. is viewed as having many of the same problems in terms of fiscal sustainability and the balance sheet that we have, the fact that those rates had risen no more than rates in Germany suggests to me that a lot of what's happening in the U.S. is the result of a stronger outlook and a reversal of the flight-to-quality flows, which in itself is, I think, encouraging.

So, again, I think one of the better developments of the intermeeting period is the broad-based improvement in financial markets. Having said that, as someone already mentioned, we've been head-faked on this before. I recall October 2007 when our statement essentially declared the financial crisis to be over, and again, in the summer of 2008 when we were expecting growth and recovery, and then we got hit with calamities in September and October. So I do think we need to be very cautious and recognize that the financial improvements are, in some sense, discounting progress that is expected in the future. And until we see concrete evidence of that progress, we shouldn't overreact to the financial improvements.

As many people have noted, the explicit evidence even for stabilization, much less for recovery, is not really at hand yet. For example, consumption growth in the second quarter is still likely to have been negative, and there are a number of drags that continue to be an issue there. In the labor markets, many have noted very severe conditions. Although UI claims have come down a bit, they're still at extraordinarily high levels, and we would expect to see continuing job losses for some time. In housing, mortgage rates and foreclosures are going to be a drag on the very tentative improvement.

I think my message is that we should be encouraged by the financial improvements but note that they are very contingent. They depend on the realization of actual improvement in the economy. We have seen some stabilization, but the evidence of solid stabilization or the beginnings of growth is certainly not here yet, and we should not overestimate that evidence. It's also important to keep in mind that, although we're accustomed to thinking about the stages of the cycle and to think about growth rates, the amplitude of the shock was extraordinarily large. So we are very far away by any measure, I think, from normalcy. Even if the economy does begin to grow at a slow pace, we'll be very far from full employment for some time, which has

implications. The longer you're away from full employment, the worse credit losses will be, the worse hysteresis will be in the labor market, the worse income effects will be on consumers, and so on. So the size of the decline also will have effects that could lead to a longer persistence as well. So, again, I think we should be somewhat cautious about declaring victory.

Inflation—I heard both sides of this argument. I guess the standard view would be that core inflation, at least, is likely to continue to moderate. There were a number of special factors besides the tobacco taxes. There were some unusual aspects of the change in model year for automobiles, which probably raised inflation in the last few months. So I would expect that to be relatively soft. It's consistent with very slow growth in nominal wages. Also, there's productivity growth, which keeps unit labor costs under control.

Inflation expectations are a somewhat different matter, as others have mentioned. What has happened so far—namely, that inflation has come back up to more normal levels—I take as a success, not a problem. Deflation risks were a concern. Within reason, an increase in inflation expectations reduces real interest rates and reduces debt burdens and is actually positive. Of course, as many people have noted, we don't want too much of a good thing—we don't want to go further. Higher inflation rates, besides being a problem for price stability, probably have negative effects on growth as well. For example, higher nominal mortgage rates tend to raise nominal payments, which could have effects on the demand for housing. So I agree with President Plosser and others that we do have to pay very close attention to inflation expectations and that our communication will be very important. In that respect, I think that the careful description of our exit strategy in the Monetary Policy Report and the Humphrey-Hawkins will be important. And all of us should continue to emphasize our ability to withdraw the stimulus

and to maintain our focus on price stability. Let me stop there and ask Brian to turn to the policy round.

MR. MADIGAN. Thank you, Mr. Chairman. Before I begin, let me note that Carol Low has available a corrected version of the chart from yesterday that had the date axis labeled incorrectly.⁹

The Bluebook presented three monetary policy alternatives for your consideration—alternatives A, B, and C—as well as a variant of alternative B, labeled B'. On Monday, we provided revised drafts of the accompanying statements. Those drafts, along with the Committee's April statement, are included in the package labeled "Material for FOMC Briefing on Monetary Policy Alternatives."¹⁰

A choice of alternative A, page 2, could be motivated by a view that the current settings of policy instruments—a near zero fed funds rate for an extended period, the current specification of the Committee's large-scale asset purchases, and the terms and conditions of the Federal Reserve's credit and liquidity programs—are unlikely to produce an outcome consistent with the dual mandate, especially given the recent backup in long rates. Your projections indicate that many of you anticipate economic weakness persisting for several years; the central tendency of your unemployment projections at the end of 2011 is 8½ to 8¾ percent, and most of you see inflation in 2011 below rates that you consider to be consistent with price stability. Moreover, many of you see very slow convergence beyond that, with at least five Committee participants anticipating that it will take the economy more than five to six years to return to a balanced growth path. Furthermore, a substantial minority consider the risks to economic growth to be skewed to the downside.

With both a modal outlook for weak growth and low inflation, and downside risks around the outlook for activity, macroeconomic considerations would seem to argue for providing additional monetary policy stimulus at this juncture. However, with the federal funds rate at the zero bound, the Committee has limited policy options at its disposal. One of those options is to step up its large-scale asset purchases. But as discussed yesterday, the Committee's scope for increasing its large-scale asset purchases is also somewhat constrained: The Desk judges that purchases of agency debt securities, if anything, should be cut back from the currently specified amount of up to \$200 billion. And the Committee could encounter increasing difficulties in buying agency mortgage-backed securities without distorting interest rate spreads, particularly if the recent backup in long rates persists and reduces the volume of mortgage refinancing and gross MBS issuance.

In these circumstances, the Committee might be left with Treasury securities as the only asset readily available for increased purchase. Alternative A specifies that the Committee would increase its purchases of Treasury securities by \$450 billion.

⁹ The corrected materials for Mr. Carpenter's briefing are appended to this transcript (appendix 9)

¹⁰ The materials used by Mr. Madigan are appended to this transcript (appendix 10).

With market participants, according to the Desk's primary dealer survey, putting only small odds on an increase in purchases, staff estimates suggest that such an announcement might reduce longer-term interest rates by $\frac{1}{4}$ to $\frac{1}{2}$ percentage point. The staff further estimates that, by the end of 2011, a reduction in long-term rates by this amount could be sufficient to lower the unemployment rate by 0.2 to 0.4 percentage point.

However, in its consideration of expanded asset purchases, the Committee would need to weigh certain other factors. First, despite the staff's estimates, you might be skeptical about the effects of asset purchases. Or you may simply be quite uncertain about those effects and prefer to wait for further evidence. Also, market perceptions of debt monetization and risks to inflation expectations that could accompany such an expansion are a worry. If the projections made by many of you turn out to be correct, inflation will remain quite subdued and any inflation scare should subside; but at this point, with the economic outlook improved, you may see appropriate risk management as calling for waiting before considering further action. A related concern is that you yourselves might not be completely confident that the Federal Reserve will have the technical tools to execute an exit strategy at the appropriate time, particularly with an even larger balance sheet than is expected under the current program of asset purchases. In addition, as noted yesterday, the Federal Reserve could also experience reduced income and diminished remittances to the Treasury or capital losses even with currently planned asset purchases, and an expansion of these purchases could amplify such losses.

Alternative A incorporates another option for providing additional policy stimulus: The Committee could be more explicit about the period of time over which it expects to hold short-term interest rates at exceptionally low levels; this might be an alternative means of putting downward pressure on longer-term interest rates and spurring aggregate demand that would not involve further asset purchases. In particular, the bracketed language in paragraph 3 notes that, rather than simply reiterating the April indication that the Committee "anticipates that economic conditions are likely to warrant exceptionally low levels of the federal funds rate for an extended period," you could instead indicate that "economic conditions are likely to warrant exceptionally low levels of the federal funds rate at least through mid-2010." This more specific formulation might help limit the extent to which markets price in an earlier start to firming than the Committee currently sees as likely. Such a statement would take the Committee in a direction that several other central banks—the Bank of Canada, the Reserve Bank of New Zealand, and the Riksbank—have already taken. Two notes provided to the Committee by the International Finance Division explored the experience of those central banks with these more explicitly contingent commitments. The staff concluded that, at least on balance in these three cases, the commitments seemed to have had limited effects on market pricing, in part because they were perceived as providing little new information to the market.

The first and second paragraphs of the statement language for alternative A would set forth the motivation for further action at this meeting, particularly by citing the recent backup in bond yields. The first paragraph would note that “Although conditions in financial markets have generally improved, the Committee judges that further monetary policy stimulus is warranted to help ensure that the sharp rise in some longer-term interest rates over recent months does not undermine a recovery in overall economic activity.” And the second paragraph would indicate that “the Committee still sees some risk that inflation could persist for a time below rates that best foster economic growth and price stability in the longer term,” repeating language used in its last three policy statements.

However, if you see the current stance of policy as suitably balancing the various risks facing the Committee, you instead might be inclined to issue a statement along the lines of alternative B, page 3. Under this alternative, the Committee would continue to indicate that it expects the fed funds rate to remain exceptionally low for an extended period, and it would retain the existing limits on its large-scale asset purchases. The language in the first paragraph would be somewhat more upbeat than in April, noting that the pace of economic contraction is slowing, that financial market conditions have improved, that sentiment has risen, and that the inventory correction is proceeding. However, the Committee would temper that optimism by noting that “economic activity is likely to remain weak for a time.” The second paragraph would reiterate the Committee’s expectation that inflation will remain subdued, but it would omit the sentence citing the risk that inflation could persist at suboptimally low rates.

The third paragraph of the revised version of alternative B is mostly similar to the corresponding paragraph in the April statement. However, the second sentence indicates that the Committee “continues to” anticipate exceptionally low levels of the federal funds rate, thus pushing back slightly on the expectation among some market participants of an early increase in the fed funds rate target. Toward the end of the paragraph, the statement no longer includes the indication that “The Federal Reserve is facilitating the extension of credit to households and businesses and supporting the functioning of financial markets through a range of liquidity programs;” repeating that point no longer seems necessary. The statement continues to note that policymakers are monitoring the size and composition of the Federal Reserve’s balance sheet, but it adds the thought that the Federal Reserve “will make adjustments to its credit and liquidity programs as warranted,” consistent with tomorrow’s announcement of extensions and modifications to various liquidity programs.

The final sentence, in brackets, would signal that the Committee is factoring exit issues into its current policy decisions by noting that “The Committee will take careful account of the necessity of assuring that policy accommodation can ultimately be withdrawn smoothly and at the appropriate time.”

Market participants reportedly expect little change in today’s FOMC statement, apart from a somewhat more optimistic assessment of the economic outlook than in

April. In most respects, the draft statement for alternative B is consistent with those expectations. However, analysts will take note that the sentence expressing concern about downside inflation risks has been dropped. Moreover, even with the emphasis in the third paragraph that the Committee “continues to” expect the fed funds rate to remain exceptionally low, the bracketed final sentence, if included, could give the impression that the Committee is preparing to remove policy accommodation sooner than markets currently expect, and it is possible that this sentence in particular could prompt a noticeable backup in interest rates. You may want to express your judgments about the desirability of including this point in the upcoming go-round.

With the revisions to the language of alternative B since the Bluebook was published, the message of alternative B has become closer to that in the Bluebook’s alternative B’. And if the bracketed sentence in the revised version of alternative B were dropped, that alternative and alternative B’ would be substantively similar, so we have dropped alternative B’ as a separate option. The version of alternative B without the bracketed sentence seems unlikely to prompt much market reaction.

Should you believe that the Committee ought to prepare to reduce the degree of monetary accommodation before long, you might see selection of alternative C, page 4, as appropriate. Of course, that view would be difficult to motivate under either the Greenbook forecast or the central tendency of your projections, but you might see the economy as likely to be more resilient than implied by these forecasts. Even more pertinently, some of you have expressed concerns that the System’s enlarged balance sheet, its purchases of Treasury securities, and the extremely low federal funds rate might unmoor inflation expectations; the increase in inflation compensation and in survey measures of inflation expectations over the intermeeting period might be viewed as worrisome in this regard. Against this backdrop, you might see a relatively near-term exit from the very accommodative policy stance as appropriate.

Under this alternative, the end of paragraph 1 would note explicitly the Committee’s expectation that a gradual recovery in economic activity is likely to begin later this year. The inflation paragraph would indicate a view that inflation will remain subdued but would leave out the phrase “for some time.” As in the current draft of alternative B, this alternative would drop the recent reference to downside inflation risk. Importantly, in paragraph 3, the Committee’s expectation of the likely time frame for “exceptionally low levels of the federal funds rate” would be changed to “until late this year.” This language would suggest that the Committee anticipates raising the federal funds rate beginning around year-end. Moreover, further down in paragraph 3, the statement would now indicate that “The Committee anticipates that the pace of purchases of securities will taper off gradually by the end of the year.” This sentence would convey a clear sense that the Committee does not intend to increase its asset purchases and, in fact, will begin to wind down its purchases of Treasury securities before long. All in all, such an announcement would be quite surprising to market participants, and in all likelihood it would prompt a considerable backup in interest rates and substantial market volatility.

A table that compares the three statements is included on the final page for your reference.

CHAIRMAN BERNANKE. Thank you, Brian. Are there questions for Brian? Not seeing any questions, let's start with President Plosser.

MR. PLOSSER. Thank you, Mr. Chairman. I've already highlighted some of my views on policy yesterday and earlier today. Let me just sort of clarify. My view of the outlook for the real economy is really not much different from most people's around the table—near-term weakness, with modest growth returning in 2010. In fact, my own forecast is for less growth in 2011 than the Greenbook's—a slow recovery in the economy in many respects. I don't disagree with that.

Where I disagree has more to do with the nature and the specification of the Phillips curve and how that guides both our inflation forecast and its implications for policy. I don't believe that the empirical relationship with gaps or slack is nearly as tight and predictable and reliable as oftentimes we think it is, so my concern is that we have to be careful about that. I would remind the Committee that, between 1991 and 1996, the staff, according to the chart they handed out yesterday, had substantial output gaps ranging from 2 to 4 percent for most of that period, and inflation hardly budged—it remained between 2½ and 3 percent during that whole period. So while I don't want to rely on anecdotal information, it is true that this link between output gaps and inflation is not a very strong one. I think we have to be cautious about relying too heavily on that.

My skepticism about the measurement of those gaps and the relationships with inflation is most relevant for the deliberations we will have about when it's time to reverse course and how we decide when that time is. I think that's going to be a very difficult choice, given the uncertainty surrounding these relationships. A tightening cycle will inevitably occur, and

choosing the right time to do it is going to be important for our future ability to achieve price stability.

I also think that, historically, this institution has been somewhat slow on the uptake many times. If we rely too heavily on measures of slack in labor markets or unemployment rate gaps, we will inevitably find ourselves behind the curve, because we know unemployment rates take a long time to turn around, and the economy will turn around before that. If we wait until the unemployment rate becomes an unacceptable level to reverse course, I'm fairly confident that we will be well behind the curve. So my point is really about the nature of the Phillips curve, and about the reliability of those estimates, and about our ability to rely on them for policy decisions during this critical time.

I believe the economy is in this sort of bumpy transition from dramatic contraction hopefully to expansion. I agree with everyone that there are substantial risks to that forecast, and we need to be conscious of those risks and those concerns. I'm very supportive, as I said yesterday, of the staff's proposals on winding down the facilities. I am opposed to increasing our large-scale asset purchases. I think we need to be very cautious in that effort. We still have a ways to go, so we still could increase purchases if we chose to do so. And I don't believe we ought to make decisions about adding to that volume very precipitously or quickly. I would also hope that the argument is symmetric; that is, if the economy improves and evolves in the way that many of us are hoping it will over the course of the fall, then we may not necessarily have to go to the full limit on some of these programs. I think we have to make that clear to the public as well.

A major issue I see in the policy decision today has to do with language—I think it's the communication effort that's going to be so difficult. I think ultimately we are going to have to

find a way to extract ourselves from the current language of “exceptionally low levels of the federal funds rate for an extended period.” That’s why I am somewhat sympathetic to the first part of paragraph 3 in alternative C, although I wouldn’t be nearly as explicit about the timing in that paragraph: “until late this year.” I would sort of strike that and just say, “for some time.” Even if we raise the federal funds rate by 25 basis points, it’s still exceptionally low, so I’m not sure that the difference between level and changes here is important.

Given my hesitancy and skepticism about tying our inflation forecast too tightly to slack measures, I actually am happier with paragraph 2 in alternative B than I was before, in the sense that both the persistence and size of the output gap become somewhat less dominant. I would prefer C in that regard, but I think paragraph 2 is better than the version in the Bluebook that we saw, so I’m happy with that.

I think we have some difficult choices before us in the coming quarters, and it would be helpful if we could continue to push for our inflation targeting goals. I hope that that is not off the table and will continue to be pursued. But I do think that in the coming months and coming quarters we are going to have to make some very difficult economic decisions, and we could face considerable political pressure in the face of that. We need to prepare ourselves for that and prepare the markets for it. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Lacker.

MR. LACKER. Thank you, Mr. Chairman. I think we should continue now with the announced schedule of asset purchases. I don’t think expanding our purchases makes any sense now, given the stabilization of the economy, the diminution of concerns about deflation, and the emergence of some scattered concerns about inflation. I agree with you that we’ve sort of

normalized inflation and inflation expectations at this point, and we're okay where we are. But given that, I don't think it makes sense to provide more stimulus.

It's true that our credit programs have run off more rapidly than we expected as of the last meeting. As I discussed yesterday, it means our balance sheet is smaller, so you might think that it provides less stimulus than you would otherwise expect. I outlined another perspective, where some components of borrowing respond endogenously, as sort of a residual. This perspective is based on the notion that the demand for reserves isn't perfectly elastic at current rates. That would suggest that the degree of stimulus hasn't turned out to be much different from what we expected it to have been. I'm happy that the Desk didn't attempt to offset the shortfall in the balance sheet, as the discussion at our last meeting might have led them to think I would have desired. I'm broadly apprehensive about the increases in reserves implied by completing the path of asset purchases we're on. As I've indicated, I think the impact depends on the nature of the demand for bank reserves. If what I outlined yesterday has some validity, then, at some point, all that buffer of borrowing from us goes away, and then the nature of the impact of our balance sheet expansion shifts qualitatively. Now, whether it's quantitatively important or not, I don't think we know. We have all known that we're sort of groping in the dark here as to what the exact analytics are of this balance sheet expansion as monetary stimulus. But I think the kind of thing I outlined yesterday deserves some consideration, and it makes me apprehensive about following all the way through on the purchases.

Now, I'm not saying I have any idea about when we're going to want to withdraw stimulus, or how the economy will play out. It just strikes me as plausible that we get to a state where we need to think about exit. I don't know when that is, and I can't pretend that I do. But I think that, when we do get there, we're going to need to be cognizant of the elasticity of demand

for reserves. In consequence, I think we ought to give some consideration at the next few meetings to lower paths for our asset purchases. If we get outcomes that are on the good side of what we are expecting, in the fourth quarter we could find ourselves in a situation where we want to pull back on what we've planned. I also think maybe a less gradual unwinding of the assets ought to be on the table. I applaud the staff again, by the way, for all of the good work they've done so far on our exit strategy. But I think we'd all admit we have a little more to do.

I'm happy with alternative B. I'm happy omitting the bracketed sentence at the end. I'm not quite sure what it means. I'm not quite sure about the extent to which we have taken account of ensuring that our policy accommodation can be withdrawn smoothly and at the appropriate time. So I'm not sure how we'd explain it to people. And, besides, I think it's a little too soon to convey, as I think the sentence would, that we think of exit as likely to be imminent enough to warrant our mentioning it in the statement. At the same time, I do think it's important, as I said earlier, to convey in the Monetary Policy Report, or elsewhere, that we have a grasp on this and we're working hard on it. Also, I'm happy omitting the statement in paragraph 2 about inflation being at low levels—I think it's important to acknowledge the shift in inflation outlook. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Lockhart.

MR. LOCKHART. Thank you, Mr. Chairman. Like President Lacker, I favor alternative B in both substance and wording. I think the staff captured my view with their description of alternative B, which said the slow pace of recovery is largely unavoidable in light of the nature and severity of the global financial crisis and the time required for healing and other structural adjustments. I think alternative B also recognizes the tentative nature of improvement in the economy, so I see it as a “stay the course” policy. As mentioned yesterday, the balance sheet is

expected to grow to approximately \$2.8 trillion, so I think the playing out of programs as currently designed should represent sufficient stimulus to sustain the progress we've seen.

I am sympathetic to the view that was expressed by both Presidents Plosser and Lacker that if we see better results, we should consider scaling back the LSAP programs. At the same time, I think it would be a mistake to react too early and strongly to the signs of stabilization and better financial market conditions. As many said yesterday and today, we have a particularly subtle communication task coming out of this meeting. I think we need to encourage positive views that can be self-reinforcing to stabilization and ultimately to recovery. But I also think we have to present a sober characterization of the state of and outlook for the economy, and we should be signaling that we're not withdrawing stimulus and support for the economy at this time. It's okay, I believe, to signal that we're thinking and planning for an eventual exit, but not initiating an exit. Yesterday, I supported—though I didn't speak for it—the plan presented by Brian Madigan for the expiration of the facilities, and I agree that the press release should and does emphasize the conditionality of that plan. I think much of the communication task, as discussed yesterday afternoon, should be accomplished after today's statement, for example, in the Chairman's Humphrey-Hawkins testimony.

On the statement itself, I can support it as it's presented. In the revised proposal, I favored B' before it was eliminated. I think it is continuous with the April statement and gives a "stay the course" message. As I said earlier, it accurately captures the economic conditions. I think the inflation language is a logical update to the April language, and since my forecast does not assume an increase in the policy rate this year or next, I'm comfortable for the time being with the "extended period" language. And finally, I do not support the bracketed statement that was appended. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Yellen.

MS. YELLEN. Thank you, Mr. Chairman. I can support alternative B, although on purely policy grounds I think that a strong case exists for further monetary stimulus. The economy appears to be stabilizing and downside risk has declined, but it will be many years before the economy is close to operating at full employment. Not surprisingly, the Bluebook optimal policy simulation shows that the stance of policy is not even close to the optimal degree of accommodation. As the Bluebook points out, unemployment is anticipated to run around 1½ percentage points higher on the constrained path than on the unconstrained path for the next three to four years, and this translates into a cumulative loss on the order of 10 percent of GDP, or \$1½ trillion, and creates a very strong case for doing everything possible to stimulate the economy. The problem is that the obvious remaining tool, large-scale Treasury purchases, may be less effective than hoped and may entail a variety of unquantifiable costs, as we have discussed. I wouldn't want to take an expansion of this program off the table if the economy were to worsen, but I wouldn't push for an expansion now.

The bottom line for me is that we likely will need to maintain the current stance of policy for a very long time to get back to full employment, and my main concern is that markets will anticipate and we may be tempted to withdraw our accommodation too soon, thereby aborting the recovery. Christina Romer recently wrote a pertinent essay for *The Economist* on “The Lessons of 1937” that you may have read. As many of you know, in that year, following two years of robust recovery, the Federal Reserve tightened policy too soon because it was worried about large quantities of excess reserves in the banking system. The economy plunged back into depression, and I believe that a parallel can be found in Japan's experience of the 1990s as well.

So I think we need to do all that we can to avoid creating the impression that we intend to raise the federal funds rate any time soon. For this reason I definitely prefer to drop the final sentence in brackets in B concerning exit strategy. By bringing this issue up in the policy statement, I am afraid we will reinforce the market's impression that we may begin to tighten policy sooner rather than later. I think discussions of exit strategy would be better handled in testimony or speeches by the Chairman. In the event that a reference is included in this statement, I have a very small wording change to propose. Currently the statement refers to taking "careful account of the necessity of ensuring that policy accommodation can ultimately be withdrawn." The phrase "can ultimately be withdrawn" sounds to me like we're not sure we can do it or that we may refrain from easing policy in particular ways later on because of our concern about our ability to withdraw. So if it is included, I would prefer a more confident wording, namely, "ensuring that policy accommodation is ultimately withdrawn smoothly and at the appropriate time." So I would essentially change "can be" to "is."

I also have a wording suggestion to make in paragraph 1 concerning the outlook, and my objective here, again, is to make the statement slightly less optimistic, slightly less able to be interpreted as saying that we are anywhere close to withdrawing stimulus, and, in my view, slightly more balanced. I propose adding to a sentence in paragraph 1 of B to recognize that even though financial conditions have improved on balance, which is a net positive for the outlook, the increase in mortgage rates we have seen has the potential to impede recovery in the housing market. In particular, I would propose the following language: "Conditions in financial markets have generally improved in recent months, although the sharp rise in mortgage rates has the potential to impede recovery in the housing market. Indicators of consumer and business sentiment..." and so on.

I think the increase in mortgage rates has been substantial. It is one of the most important and most discussed developments since our last meeting, and it does create a risk to the outlook. I think it deserves mention in the statement as a negative factor that partially offsets what is a net improvement. I also would argue for including it for the sake of balance. I think it parallels our discussion in the very next sentence that says that there are some factors restraining household spending, and again, in the inflation section where we mention increases in the prices of energy and commodities as an offset to our view that inflation will remain generally subdued. So that's a concrete suggestion.

CHAIRMAN BERNANKE. Thank you. President Evans.

MR. EVANS. Thank you, Mr. Chairman. I took some comfort from our discussion yesterday on reserve management tools, although we had discussions about these before. It does seem as if these tools are likely to be enough to allow tightening when we need it.

Previously I would have thought that we would have to grapple with the problem of getting our balance sheet in better shape and that markets would see that coming well before we ever got to a positive federal funds rate. So I guess I'm more persuaded—although the continued staff analysis will be helpful on this—that it's likely to be more contemporaneous; that is, when we decide that we need to tighten, we can bring these tools to bear quickly and may not have to signal very much in advance. I think that's very helpful, because part of what we're grappling with right now is how to position ourselves for doing the tightening a few meetings or several meetings into the future. I don't have a firm opinion really on when it's likely to be the case that we'll need to tighten. I think it's pretty far in the future, 2010 maybe.

On the large-scale asset purchases, I guess I prefer leaving them the way they are, given the improvement in the economy. If at the next meeting we think it's going to be important to

communicate about a tapering-off strategy—if we are worried about the cliff—I think we probably need to decide now about how to communicate that. If we wait, then the cliff is going to be that much closer, and you're not really going to be able to do this with the existing size. So if you want to maintain the existing size, I think you would need to do that soon, like today probably. But it's not in the statement.

On the inflation forecast, it does seem to me that there's a pretty wide dispersion of forecasts for core PCE in 2011, which is not that far away—so the dispersion is a bit unusual. If you take out the high and the low, then it's $\frac{1}{2}$ to 2 percent. I hope that the minutes will reflect this diversity of opinion in a slightly robust fashion, because that debate is taking place out in the public. We all go out and face very difficult questions, and even though we might feel pretty confident about our outlook for inflation, this dispersion of views is sort of a reality check as to how we deal with that. On inflation forecasts, it does seem like there is substantial resource slack now. It has been a very deep contraction, and so my own forecast is relatively low. Even if you allow for differences of NAIRUs, it's a big amount of slack.

But there are risks, and we know the theory says that inflation expectations can “take off.” That would be a key element in inflation determination and our forecast. Events somewhat beyond our control—fiscal pressures and how they are dealt with in the large number of programs that are coming down the pike, as President Fisher reminded us—and our balance sheet size are adding to this risk. I think what we've been doing is appropriate, but it does add to the risk. So I think a lot of it comes down to how much confidence we have in a particular forecast, and some people are inclined to write a larger number for 2011, and others are inclined to write down a much smaller number. I kind of prefer to take the middle course, but in this particular bimodal situation, these opposing forces are difficult. So normally in a situation like

this, we can fall back on timing: We don't have to do this today, and in the worst case, we're several meetings before the pressure erupts, and, Mr. Chairman, you will be providing testimony soon in your Monetary Policy Report, and that would be a natural way to communicate that. But it does seem as though these issues have been out there, you've been out front in talking about them. So I just don't know exactly what the likely impact is going to be from delivering that message again.

So even though the bimodal beliefs are quite different, I prefer the middle course, and so I do prefer alternative B. On the particular issues for the statement, I'm not bothered by the bracketed statement at the end. I guess if I were going to make the best case, it is that it seems accurate that we will continue to take careful account of this. We've got the reserve management tools. We've just had a meeting where we talked an awful lot about it. So it's not inappropriate to raise this now. The Chairman and others have talked about exactly this issue, and probably have used words very similar to this. We say it in public. So what does it mean if we don't say it here in the statement but we say it in public? Well, we can always ask that question because that's not an uncommon type of omission. It does seem as if the language in the second paragraph gets at this middle ground for inflation, because we took out the part saying something like "inflation could be uncomfortably low," or whatever the language was indicating that it could be suboptimal. So I'm comfortable with alternative B.

CHAIRMAN BERNANKE. President Rosengren.

MR. ROSENGREN. Thank you, Mr. Chairman. The forecast has high unemployment rates and low inflation rates through 2011, and the Greenbook forecast expects an undesirably low inflation rate even at the end of 2013. Missing both elements of the dual mandate through 2011 and possibly beyond strongly suggests to me that we should attempt to provide more

stimulus both to avoid a multiyear elevated unemployment rate and to avoid a prolonged period of lower than desired inflation.

Mortgage and Treasury rates have risen despite our large-scale asset purchase program. The increase in Treasury rates likely reflects the reduced precautionary demand for that asset as financial markets have improved. However, the increase in mortgage rates is likely to slow both residential investment and consumption relative to what they would be if we were pushing rates lower. There has been a reluctance to intervene more aggressively in the thirty-year mortgage market because it is felt that this would disrupt market functioning. But if our LSAPs cannot produce mortgage rates that are low enough to spur refinancing and new construction, then we have dramatically expanded our balance sheet with little to show for it.

I believe we can and should do more. While I support alternative B, I would encourage the Desk to further reduce mortgage rates relative to Treasury rates. Furthermore, since the market for five- and seven-year ARMs is already quite limited, aggressive activity in ARMs would restore the market and provide a low-cost alternative for some homebuyers willing to float after five or seven years. Because of the lack of activity, setting a low rate in this market and increasing volume would not disrupt market functioning. In fact, it would resuscitate the market. These ARMs also have some appeal for our balance sheet since they mature relatively quickly, making the exit strategy easier for these assets. Acting more aggressively to restore the ARM market and to further reduce the spread relative to Treasuries for longer-maturity mortgages seem like appropriate steps to gain greater confidence that we will achieve both elements of our dual mandate within a reasonable time horizon.

I would emphasize that the experience of the past seven years has taught us that conducting monetary policy in a very low-inflation environment is not as straightforward as we

might have wished. At some point, we should have a fuller discussion of our inflation goal in light of the probability of reaching the zero lower bound in the future and the difficulty in conducting monetary policy when we are at the zero bound.

In terms of what's in the statement, I actually would not be for having the final sentence. We have not been communicating the path of the LSAP program. I think we can taper as appropriate without necessarily having to discuss how we're going to taper it. I do prefer President Yellen's language—I do think it's appropriate to mention the rise in rates, because it has been quite appreciable, and it has been probably the biggest news that we've had in the last month in terms of what has been going on in the financial markets. Thank you.

CHAIRMAN BERNANKE. Thank you. President Stern.

MR. STERN. Thank you, Mr. Chairman. Well, I don't know if we're at a turning point in economic activity, although I don't think we're far away. But one thing I do know is that when you're close to or at turning points, there's always a tremendous amount of uncertainty: It's very difficult to read the state of the economy; it's very difficult to come to a conclusion with confidence as to how the economy is going to perform going forward in this kind of environment.

The reason I mention that is that I think decisionmaking isn't going to get any easier any time soon. I think this is going to characterize things probably for the next year and perhaps more. In this environment with all of this uncertainty, one nice rule of thumb might be to do no harm, especially since recent trends, while certainly not great, are better than they had been and in some ways better than we had anticipated just a few months ago. So I wouldn't change any policy parameters at this point with regard to purchases of longer-term assets or other parameters that we might think about. Yesterday I commented that I didn't think we had a problem

convincing market participants that we were prepared to do what it would take to restore financial stability and ultimately economic health. I think people believe that and understand that. I'm a little less convinced that they understand that we do have an exit strategy and will execute it appropriately.

Against that background, and to begin to address that concern, I can favor either President Plosser's alternative C—the one he described in the material he distributed late last week—or alternative B as presented here with that last sentence in brackets included. (It's okay with me if it's modified along the lines that President Yellen suggested.) I don't think that sentence will be read as if we're about to change policy any time soon. As President Evans commented, people have been talking about that publicly. I think that would provide reassurance to people in the marketplace and people in the economy more generally that we are aware of the challenge and we're prepared to address it: We know we're in an environment where our balance sheet has expanded tremendously and is likely to expand further, given our plans, and where there's a very expansionary fiscal policy in place with no end in sight. I think it would be appropriate to make that point clear. Thank you.

CHAIRMAN BERNANKE. Thank you. Governor Kohn.

MR. KOHN. Thank you, Mr. Chairman. As I noted at the end of my remarks, I don't think the central tendency that we've submitted is really a satisfactory outcome for the economy. We're looking at an unemployment rate—just considering the center of the central tendency—of about 8½ percent in two and a half years and an inflation rate of 1½ percent, which is below the 2 percent that most of us have favored; and that's probably headed lower unless the economy picks up steam very, very fast after that. I think that's why most Taylor rules and the optimal control simulations that President Yellen mentioned call for negative nominal interest rates now.

Moreover, I think from a risk-management perspective, which we used to talk about around here, even though the risks are more balanced on either side of this sluggish recovery now than they were, I think the cost of a shortfall is greater than the cost of an overshoot. We know how to counter inflation. We've done it before and we can do it again. But this central tendency tells me that, given the size of the shock, we're having trouble getting satisfactory outcomes for output and inflation. I think the risk, as President Bullard pointed out, is that we could be caught in a high-output-gap, low-inflation or even deflationary environment. I don't think that's going to happen, but I think there's a risk there, and if we get caught in that, I think it's very, very difficult to figure out how to get out of it. This seemed to be much easier, Mr. Chairman, when we were lecturing Japan than when we're doing it ourselves. [Laughter] Everybody had a solution for them, and somehow when you're there, there are a lot of complications, aren't there?

So of the two possible policy errors—moving toward tightening too soon and moving too late—I'm more worried that we'll move too soon than that we'll move too late. I think we can correct that latter one. I don't think there is anything we can do about this now, despite the lack of satisfactory outcome. Because of inflation sensitivity, because of exit worries, because of concerns about monetization of the debt in the presence of a large and uncertain fiscal path, I'm not advocating more policy action today. I think we should continue with our purchases. I would go up to the limits that we've set, and I would include the ARMs—at least a small amount of the ARMs—in those purchases, hoping to have a positive effect on mortgage markets. I hope our next decision is how and when to remove accommodation, to remove the quantitative and interest rate accommodation, but I don't rule out the possibility that we could take future easing actions if circumstances called for it—that would be more large-scale asset purchases, possibly,

and, to my mind, lowering the interest rate on excess reserves would help as well. So I would be careful not to say something that rules out the possibility of doing something more later. In response to President Stern, I'd be concerned that putting that sentence in here would cast doubt on whether we're willing to use all of the tools available under the circumstances.

I think that it's far too soon to signal that the exit is drawing closer; furthermore, if we're seen as worried about the exit and looking carefully at it, it will undermine our effect. I agree with everyone else—we need to be very, very clear that we will be able to exit when we decide to exit. But I don't think we're anywhere close to making that decision. So I support the language of alternative B without the bracketed sentence. I do think removing this sentence about inflation being less than desirable from the second paragraph will be seen as a little bit more hawkish, a little bit more worried about inflation than we were before. I think we could justify keeping the sentence based on the forecasts that we have from the Committee, but the forecasts have been revised up and certainly the degree to which the Committee expects inflation to be less than it ideally should be has been reduced to some extent.

I think it's especially important to keep in the sentence about continuing to anticipate that economic conditions are likely to warrant exceptionally low levels of the fed funds rate for a time. I think we need to signal to the market that, even if they've changed their expectations for future interest rates, we have not, at least not appreciably.

And finally, on President Yellen's point, I guess I'd be concerned that putting in her whole sentence would really undermine the sense that financial conditions had improved and that the economy was in the process of bottoming out. If we did anything, I would just add something like, "Although mortgage interest rates have risen, conditions in financial markets have improved on balance in recent months." Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Bullard.

MR. BULLARD. Thank you, Mr. Chairman. I think alternative B is sensible at this juncture. In this situation, I'm going to argue here that it's a good time to take stock and get more information—we'd like to see how this recovery develops over the summer. Also, I think we're able to retain alternatives for future meetings, and I agree with Governor Kohn that we may want to move at future meetings. So I'll talk about several aspects of alternative B.

On the bracketed last sentence concerning the exit strategy, I agree with some of the comments that have been made that this may be more confusing than helpful with respect to the LSAP program. We will discuss exit, and, as President Yellen said, it's better discussed in testimony. This is an inherently technical, complicated thing—it just will not come across in a simple way to the general public. It takes a lot of explaining, and I think it will be hard to figure out from this sentence what is meant in terms of exit strategy. I also prefer the “as warranted” language.

I want to talk for just a minute about forward guidance and naming specific dates for when we might make future interest rate moves, as are contemplated in alternatives A and C. First of all, I think everyone has said that we need the conditionality—you need to know how the economy is evolving in order to know when you're going to make a move. Naming a specific date seems to undermine that, and in fact, I think it might go the wrong direction. You might essentially be pre-announcing a rate increase far ahead of when you actually have the information to decide whether you want to do that or not. Of course, you could always move later and get the market to move off that, but you're kind of drawing this line in the sand, and I'm not sure that's what the Committee wants to do. I know other countries have done this. One

thing I will say about that is, when you do that, you do get announcement effects, but that's because you surprised the markets. That's not necessarily good policy or a good thing to do.

This business of promising to keep rates lower for longer works well in models, but you're pushing very hard on this rational expectations assumption inside the models—everybody has great foresight about the future, everybody understands, there's a lot of credibility—and I'm not sure that that maps into the reality of our situation. Also, when you say “lower for longer,” you mean relative to what would otherwise be the optimal policy rule, and I'm not sure that we actually have that embedded out there in the market. I think the effects that we might get from further strengthening our commitment to low rates further out in the future are probably lost in the reality of the situation that we face. I also think there are limits, just because of discounting in the future—if you promise to keep rates low far into the future, then that gets discounted by the markets the farther you go into the future.

In summary, I would just keep the “for an extended period” language at this meeting and at future meetings. I think that taps into the amount that we can get out of that future commitment, and it's doing as much as we can on that dimension.

Let me just make a few brief comments here about expanding the LSAP. I've characterized this as increasing the persistent components of the balance sheet, so I would ignore the components that are running off, such as the TAF. They are going up at a rapid rate. As I said earlier, you know, there are concerns about monetizing the debt, and I won't go into those again—I think that's an appearance issue, not an intention on anybody's part. Those perceptions are very hard to control outside the U.S. I guess what I think about LSAP is that we are only about halfway through the current program. We don't really need to commit to further purchases at this time, but we have the optionality to do that later. I may be sympathetic with that later on.

So right now I think it's better to wait and gather information over the summer. On cliff effects, I'm convinced now that we can just let the program expire as scheduled, and it won't have a major market disruption. Again, we have conditionality to do more if we want or if it seems necessary.

Let me just regale you with policy rules for large-scale asset purchases. President Lacker said earlier that discretion is the enemy of clarity, which I thought was Shakespearesque of him. But we've not been clear about our reaction function with respect to these programs, and that makes it hard not just for the public, but also for ourselves. You make a one-time announcement and the market is wondering, well, will they make another announcement in six months and another announcement six months after that? It's very hard to know.

I think it's the Committee's job—I should add, not the Desk's job—to get a reaction function so that, if unemployment or output gaps deteriorated in a certain way, that would be the case when we would do more. Or the Committee could set some kind of mapping for how much we would want to do in various situations. I actually think that would help us and allow us to do more if necessary, because you'd be conveying this understanding of a state-contingent path out there in the future, which is the object that we don't have right now.

Finally, this is a lost cause, but I would advocate moving the federal funds rate later in the statement. I think it reduces emphasis on the federal funds rate as the key tool of policy. We're seeing now that—everybody's wondering, “Oh, maybe you'll raise rates later this year or next year” or something like that. It may be that, the way things are evolving, the fed funds rate will turn out not to be our primary policy tool on the other side of this. So I think we should think more about de-emphasizing the federal funds rate. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. President Bullard, we already moved it from the top of the statement all the way down to paragraph 3. [Laughter] I thought that was a fair compromise, by the way. President Pianalto.

MS. PIANALTO. Thank you, Mr. Chairman. My outlook assumes that our policy accommodation is going to continue for some time, and yet the recovery is still quite prolonged. As has been noted, financial market conditions have improved somewhat during the intermeeting period, but those improvements have taken place alongside of continuing significant public policy interventions. So a little progress has been made, but I think the economy needs a considerable amount of time to cement that progress. In this environment, I think we have room to continue to evaluate the outlook and the effects of our current programs. So I support alternative B.

Given Brian's comments about the uncertainty on how the language in the bracketed sentence would be received, I would just leave it out. Given that we are going to have a Monetary Policy Report and that you are going to give testimony in the near future, I would just rely on those vehicles to address some of these issues more fully. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Hoenig.

MR. HOENIG. Thank you, Mr. Chairman. I'm fine with alternative B, and I would at some point—not today, but in the future—have a preference for C. I could work with the language that's in the brackets, but it's not essential to me.

Obviously, the economy remains weak. But, as the discussion and as the projections have indicated, it's also true that economic and financial conditions have improved. We expect to see some modest improvement in economic growth, perhaps in the latter part of this year and even next year, as we've discussed. We're now in a situation where the data are changing, and

we are beginning to talk about the possibility of a turning point, and in that regard, I agree with President Stern—the data are mixed, and they will be mixed for some time.

Looking toward the decisions ahead of us, I think that, given the mixed data and given the experiences that we had in the fall of 2007 and in the summer of 2008, there will be an enormous power of inertia at this table not to make that downward mistake. It's hard to perceive that the monetary and fiscal stimulus that's in place, as significant it is, will really carry the day forward. We're going to resist that until we actually see the data. Furthermore, this period of low inflation is going to kind of reinforce our view that we should wait and we should make sure that the recovery is strong. I think that's where we do risk the other side of this, and that's how we create inflationary issues or bubbles four or five years down the road because of this extended period of accommodation, and we shouldn't lose sight of that. I think it's extremely important.

With that in mind, I was pleased that we had the conversation yesterday about our exit strategy. My goals around that are that we find ourselves in a position where we can talk about our policy rate being moved back towards neutral and we can talk about the fact that we're shrinking our balance sheet and the degree of excess reserves. I agree that we don't want to repeat the experience of the late 1930s, but that was a very blunt movement up in reserve requirements. Hopefully we've learned that lesson and would be much more sensitive and much more gradual. Given the degree of stimulus, I think it will take us years to even get back close to neutral. So the economy is going to be growing slowly, but our moves back toward neutral also will be very slow.

Another goal, besides shrinking our balance sheet, should be restoring the composition of our balance sheet. We are now in the credit allocation business towards the housing market, and that, of course, gives me some pause.

I do think that a case can be made for scaling back our asset purchase program, doing less than is currently authorized. When we originally began these purchases some months ago, the outlook was considerably weaker. Deflation was a possibility, although a small one, and financial stress was, in fact, elevated. With the improving economic and financial conditions, with the very significant fiscal stimulus beginning to kick in, and with deflation even less of a threat, I think it would be prudent to reevaluate these purchases and determine whether we need to go up to the total amount. That is what I mentioned yesterday about carefully reviewing that at each meeting. I also would be very reluctant to expand the Treasury purchase program. Given the size of the debt that is being issued, the optics on that can be nothing but harmful going forward.

So we have lots to think about in the long term, and I want to begin to raise the need for that long-term perspective today, even though some decisions along those lines are still in the future. Thank you.

CHAIRMAN BERNANKE. Thank you. President Fisher.

MR. FISHER. Mr. Chairman, I'm in favor of alternative B. I appreciate some of the restructuring that was made from the previous draft. I agree with President Yellen that we ought to change the wording in that last bracketed sentence, because I'm in favor of including that sentence, and here's why. I think the market is asking us to at least clarify that we have thought about an exit strategy. With all due respect to Brian, whose work I admire enormously—both Brians, by the way—I think we might actually get a negative market reaction unless we clarify, at least in the very general terms in which this has been described. “The Committee will continue to take careful account of the necessity of ensuring that policy accommodation,” as Janet said, “is (or will be) ultimately withdrawn smoothly and at the appropriate time.” It

doesn't say too much. I think it tees up your congressional testimony. I agree in this sense with President Evans and President Stern; I certainly am not opposed to including it, and, in fact, I think we should include it. If we did, and I would urge us to consider it, then I don't think we need to say "continues to anticipate." That's a little bit too conditional. Mr. Vice Chairman, I get your point—we are "continuing to," but the fact is we do anticipate. Plus, we use the word "continue" twice in one paragraph. So I would urge you to consider, Mr. Chairman, including that last sentence. It is a truism. It is, indeed, a fact that we are taking account of the necessity of ensuring that policy accommodation is or will be ultimately withdrawn smoothly and at an appropriate time. I don't see what it costs us, and I do think there is a general explicit and implicit expectation that we do so.

One other comment: I haven't thought this through tremendously, but I don't necessarily disagree with President Rosengren's suggestion, because I think the Desk ought to have some leeway with regard to the mortgage-backed securities. As everybody in this room knows, I thought the Treasury purchase program was a mistake. It was a very expensive mistake. I don't think it has helped. I think has actually set us back a little bit, and obviously I wouldn't be in favor of extending it any further. But now that we're there, we might continue the program until it's done. But I think the Desk might have some discretion, and we might so instruct the Desk—not in this statement—but they might work their way around the yield curve a bit for mortgage-backed securities and into certain types of mortgage-backed securities. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. Governor Warsh.

MR. WARSH. Thank you, Mr. Chairman. I have three points. First, I think it is likely we'll need to remove our policy accommodation sooner than the Greenbook indicates, but I think

it's unlikely we'll begin to remove it as quickly as markets currently suggest. Second, given the commitments that we have made, notwithstanding the "up to" language, on the asset purchases, while I'm not in favor of extending that obligation, I do think we should work to achieve that existing commitment, for credibility purposes. Third, I support alternative B and will just make a few comments on language. With respect to the last sentence, I think it is essential that markets understand that we are taking these exit considerations seriously. I think that is good both for actions that we could take that are even more aggressive—that they know we're taking it with full understanding and confidence that we can exit—and for actions that we have already undertaken.

Having said that, I don't think this is the right place to be making that argument. I don't think our experience in the last few years in using this statement for nuance or for volume control has proven to be the most effective way of doing so. I think we have ample opportunities through you, Mr. Chairman, to be very clear about the need for exit and these considerations. So, on balance, though I'm sympathetic to the truth of it, I think it would be more prudent for you to make this point clear and consistent in your Monetary Policy Report and other speaking opportunities. If the bracketed sentence were in, we'd be proving a little too much. To me, the fact that we're now entering this into the statement does have the feel of sort of protesting. So on balance, I would favor not doing it, though I am, of course, comfortable with the substance.

I just want to flag the penultimate sentence. "The Federal Reserve is monitoring the size and composition of its balance sheet." I like it, and I think it helps for the announcement that we make on Thursday, about Brian Madigan's recommendations, which is pretty important. I think it's nice that we have a bridge to that, so that market participants and reporters alike don't think

that we have, in their view, yet again surprised them on what the substance is. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. Governor Duke.

MS. DUKE. Thank you, Mr. Chairman. I'm going to be quite repetitive, so I'll be very brief. I, too, am troubled by the projections not being consistent with our dual mandate. However, with Treasuries as the only option for expansion, I'm not at all convinced that a modest increase in our Treasury purchases brings us that much closer to our objective. And I am concerned about the difficulties with exiting an even larger balance sheet. So I support alternative B, and I would omit the final sentence in light of the risk that the interpretation would be that our exit is imminent. Finally, I would echo President Rosengren's and Governor Kohn's support of option ARMs. Thank you.

CHAIRMAN BERNANKE. Thank you. Governor Tarullo.

MR. TARULLO. Thank you, Mr. Chairman. I must confess to being somewhat discomfited by what I see as a disconnect between the analyses of the economy, which I alluded to in the earlier go-round, and the fact that when it comes to policy there seems to be more concern about the potential for inflation some years out than there is with the serious underperformance of the economy today and for the foreseeable future.

I understood our action in March to be an effort to provide further accommodation in the circumstance of zero-bound rates. I think it's very difficult to make a judgment now as to exactly what effect that has had. It does seem, as President Yellen mentioned earlier, that there is a strong theoretical case, that the counterfactual is difficult to come by, and that it is, other than statements of future intentions, really the only policy tool available to us.

I was somewhat attracted by not an option in the Bluebook, but an option included in the June 16 memo from the two Brians, which was to modestly stretch out the Treasury purchase program until the end of the year. I was attracted to that for a variety of reasons. One is that it just created a certain time symmetry in our decisionmaking, because the MBS and agency debt programs go through the end of the year. That, in turn, avoided what I fear is now going to be an enormous spotlight placed upon us at the August meeting, which is going to be interpreted as the moment of truth in deciding what happens now with the large-scale asset purchase programs. I also thought that it might offset, to some degree, what I continue to fear is going to be the interpretation of market actors and economic observers more generally—not simply that we failed to expand today, but, within the context of the announcement to come tomorrow, the announcement likely to come from the FDIC, and, precisely as President Fisher has noted, because there seems to be a demand that we talk about scaling back the program, that this inaction will be seen as a beginning response to those demands, which, for obvious reasons, I think is misplaced as a policy matter. Having said all of that, I note that there is little or no appetite in the rest of the Open Market Committee for even this action and certainly not for what was included in the Bluebook as alternative A, which I actually wouldn't favor at this point either. So I would be prepared to go along with alternative B.

Let me now turn to the language issues in alternative B, which, as you can imagine, also reflect some of my concerns. Like some of the earlier speakers, I find that the first paragraph is a bit too upbeat, not just for the way that I read the economy, but, again, for the conversation we had around this table earlier this morning. It's not that there's anything in there that's wrong or that I disagree with. It's not what is said—I guess it's more what was left unsaid. I was trying to figure that out overnight following dinner at the embassy and the baseball game later on in the

evening. It lacks a reference to what so many of us commented on, which is our expectation of just how slow the recovery will be when it comes. You see gradual resumption of sustainable growth in there, but the likelihood of a long period, and a rather halting one at that, is what came through in much of what all seventeen of us said earlier in the day. I would welcome any suggestions from anybody else as to how we might add that idea.

The more important issue to me is the potential inclusion of the final bracketed sentence, which I think would be a significant policy mistake. And I think that for several reasons. One is my substantive policy views, which I described earlier. But, probably more importantly for the rest of you, I think it would be a mistake precisely because of the way these statements are read, so I'm elaborating a bit on what Governor Warsh has said. As everybody knows, anything regarded as new in these statements is invested with enormous significance. By and large, the statement goes a little bit by increment—a word is dropped here, a phrase is added there, and people kind of masticate those changes. If you've got something that is brand new, something that appears to be satisfying a demand from a certain group of market actors, I think that will be invested with enormous significance. Under the circumstances, I don't see that the policy position of the Open Market Committee is there, and I, for one, don't think that we're going to actually get there anytime soon. I also agree with President Lacker in that I have difficulty understanding what that sentence actually means. It's either a tautology, in which case it's not particularly helpful, or it's suggesting something that I don't think we've actually done in a policy sense. So I think it's both appropriate and important for the Chairman and others, either in public testimony or on background, to explicate the various considerations that were reflected in the very useful memos distributed by the staff. But I do think that this would be the story of this Open Market Committee meeting if it were included. Thank you.

CHAIRMAN BERNANKE. Thank you. President Lacker, you had a comment?

MR. LACKER. Governor Tarullo, you mentioned an imminent announcement by the Federal Deposit Insurance Corporation?

MR. TARULLO. I think they're likely to ramp back the guarantees that they've been providing.

MR. LACKER. Thank you.

CHAIRMAN BERNANKE. Vice Chairman.

VICE CHAIRMAN DUDLEY. Thank you, Mr. Chairman. The statement is one way we communicate, but we also communicate in speeches. I just want to reemphasize one more time that it's really important in our communications to distinguish between stressing how well prepared we are to exit, in the sense of having the necessary tools, and actually exiting. I think we have to be really clear on that, or else we are going to confuse people into thinking we're about to exit because we're talking about our ability to exit. We obviously need to demonstrate that we have the ability to exit to keep inflation expectations well anchored. But we don't want them to think that we're going to exit soon, or sooner than we actually think, because that will boost the expected path of short-term rates, which will raise long-term interest rates, and, therefore, choke off recovery. So it's tricky.

If you think of long-term rates as having three major components—the expected path of real short-term rates, inflation expectations, and risk premiums—you can sort of put it in that context. Making it clear that the economy is pretty weak and that we don't think there's any meaningful inflation risk, so we can keep short-term rates low for an extended period, should put the focus on that first component, keeping the real rate path expectations well contained. Making clear that we have the tools to exit smoothly, so we can keep inflation in check over the

longer term, should work on that second component by keeping inflation expectations well anchored. It also should work on the third component, because if we keep inflation expectations well anchored, there will be less dispersion in terms of inflation expectations, and that presumably will result in a lower risk premium. That's sort of how I think about it conceptually in terms of the task at hand. It's not easy, but I think we have to be very, very careful in how we go forward communicating.

In terms of the LSAP program, I think the tapering is not as big an issue for Treasuries, because the amount of Treasuries that were purchased is not that large relative to the flow of issuance. I think we can do it without actually saying it explicitly. We can just purchase Treasuries at a little faster rate than the \$300 billion rate over six months, and so at the end we won't have quite as much left, so it will just taper off. The other problem with talking about tapering is that it implies that you're done. If we start talking about tapering, people say, "Oh, they're done." I think it's premature at this stage to make strong statements about what we want to do or not do with the purchase programs going forward, especially if the environment turns out to be worse than we expect.

On the first paragraph, I agree with Governor Tarullo. The first paragraph does sound sort of upbeat. I'm not really sure how you would fix it—maybe you could try to have some language that suggests that none of this is a real surprise. In other words, the economy is evolving pretty closely to the forecast that we actually had, so the improvement is not a shock to us. It's just that there are lots of other issues still outstanding that make us worry about the strength of the recovery over the longer term. So it's a little bit upbeat relative to what I think we really think around the table.

In terms of the statement, I'm in favor of B. On the last, bracketed sentence, my question is really: does it reassure, or does it make the market more worried about our ability to exit and about the timing of exit? I'm really not sure. I think you could argue it both ways, as people around the table have done. My view is, if we're not sure, we probably shouldn't include it, because I go back to what Governor Warsh said: This is not the greatest medium of communication. I think I would exclude the last sentence, just because I'm not sure how the market will react to it. It's probably better to take that up in the Chairman's testimony or in the Monetary Policy Report or in speeches. Thank you.

CHAIRMAN BERNANKE. Thank you, everybody. I think that most of us are agreed that, given the improvement in the economy, there's not much need to change our policy stance today, so we should keep our programs in place on the schedule that we have already announced.

That would bring us to alternative B, which I think is the right choice. Most of you were in favor of striking the last sentence. I think that's the right decision. I'm reminded of an experience I had when I first took this job, when we were still raising interest rates. Remember that? I told a congressional committee that the time would come, eventually, when we would have to stop raising interest rates. Of course, the expectation of an immediate rate change went right through the market, and I was completely flabbergasted by the inability of the markets to understand plain English. [Laughter] But, unfortunately, that's reality. So I think there would be a risk of suggesting that we were preparing to exit. In this case, we are taking very substantial steps to address this particular issue, not just in testimony. Our current plan is to have a significant description of exit strategy, tools, and so on, in the Monetary Policy Report, which would obviously be available to everyone in more detail than I could give in a short testimony. So I would recommend dropping the last sentence.

We had some original language on tapering, and I think the problem that we were having with it was there's no way to describe our plans to taper without essentially determining at this point that we are almost certainly going to stop. We may well do that, but I think if we can maintain that optionality for one more meeting it would probably be a good idea. I think we could stop the Treasury program flat, or we could say we are doing \$30 billion a month the rest of the year, or whatever, but I don't think that we need to take that decision yet.

Two related things. President Yellen, supported by President Rosengren, brought up the mortgage rate issue, and I think she had two objectives. One was to point to an important factor; the other was to kind of tone down the cheeriness of the first paragraph. I have a specific concern with the mortgage rate sentence—if we say that mortgage rates are a big problem, that's going to signal something about our asset purchase program, I'm afraid, so that's a concern that I would have. But I do understand the issue about general tone. Let me just raise this for consideration. The second sentence in alternative B, “Conditions in financial markets have generally improved in recent months, and indicators of consumer and business sentiment have risen,” is obviously a very positive sentence and one that has no parallel in the April statement. We could, if people like, either strike the sentence entirely, or, perhaps to recognize that there has been general improvement in financial markets, strike the second part about consumer and business sentiment, which would change the tone a bit. I don't know if that would satisfy the need. Governor Tarullo mentioned this as well. Is there any response to that thought?

MR. TARULLO. I would find striking the sentence useful. I think it would balance it a little bit better. Thank you.

CHAIRMAN BERNANKE. Striking the whole sentence, is everyone okay with that?

MR. EVANS. The entire sentence?

CHAIRMAN BERNANKE. No?

MR. LACKER. I think the “financial conditions have improved” is worth having.

VICE CHAIRMAN DUDLEY. I would cut that second half of the sentence.

MR. STERN. I would drop the second part of it.

CHAIRMAN BERNANKE. All right. So what I’m hearing is drop the second half, is that okay? President Yellen, does that sound okay?

MS. YELLEN. Yes.

CHAIRMAN BERNANKE. All right. Brian will end the sentence after “in recent months” and strike the part about sentiment. I think that is all that was on the table. As noted, it is somewhat more upbeat. It does drop the concern about deflation, although it does say “subdued for some time,” which is a strengthening of what we said last time. And, of course, it does refer appropriately to the adjustments—the credit and liquidity programs—which will be followed up on Thursday. Any other comments? If not, Debbie, would you take the roll?

MS. DANKER. Yes. The vote covers the statement that’s in the packet that was handed out today, with two changes. One is dropping the phrase “and indicators of consumer and business sentiment have risen.” The other is dropping the bracketed sentence at the bottom.

In addition, the vote covers the directive from page 69 of the Bluebook, with one amendment: That directive had included the sentence stating that the Desk is expected to purchase at least \$500 billion in agency MBS by the end of the second quarter of this year. Given that it is June 24, and they already have purchased \$500 billion, that sentence has now been changed to, “The Desk is expected to purchase up to \$1.25 trillion of agency MBS by the end of the year.” So it just covers the full year amount.

Chairman Bernanke	Yes
Vice Chairman Dudley	Yes

Governor Duke	Yes
President Evans	Yes
Governor Kohn	Yes
President Lacker	Yes
President Lockhart	Yes
Governor Tarullo	Yes
Governor Warsh	Yes
President Yellen	Yes

CHAIRMAN BERNANKE. Thank you very much. The next meeting is Tuesday and Wednesday, August 11 and 12. Let me remind you that you have until 5:00 p.m. tomorrow to submit any revisions to your projections based on data that you had available at the meeting.

At this point, I will formally adjourn the meeting. Lunch is available, if you'd like to come. Those of you who have to leave, by all means do so. But those of you who are able to stay, I would be happy to talk a bit about the regulatory reform plan and its implications for the Fed, and then we can have some discussion of that informally. Thank you.

END OF MEETING